



ILLUSTRATED  
AND  
DESCRIPTIVE



# CATALOGUE AND PRICE LIST

OF

DRAWING PAPERS

MATHEMATICAL INSTRUMENTS

HARD RUBBER DRAWING-TOOLS

SCALES, CURVES, TAPES, T SQUARES AND

ARTIST'S MATERIALS OF EVERY KIND

OF

KEUFFEL AND ESSER

111 Fulton Street



111 Fulton Street

NEW YORK.

1875.

NINTH EDITION.

PRICE 10 CENTS.

SAMPLE-BOOK OF DRAWING PAPER 15 CENTS.

CATALOGUE AND PRICELIST

DE WINKELMANN

MATHEMATICAL INSTRUMENTS

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KEUFFEL AND ESSEB

NEW YORK

1875

FIFTH EDITION

PRINTED BY KEUFFEL AND ESSEB

New York, October 1875.

To our friends and patrons we herewith present our

FOURTH

Illustrated and Descriptive  
CATALOGUE AND PRICE LIST

which, like the previous ones, refers to the leading articles of the trade, but which has in many respects been enlarged and completed, to keep in line with the progress of the age.

The articles mentioned in this catalogue are partly of our own make, or otherwise by us imported and comprise the most valuable collection of Drawing-Instruments, Paints, Brushes, Papers and Artists-Materials of all kinds. Without exaggeration we can say, that this collection, like our former, is the product of long experience, study and skill, and of our best talents which we have devoted to our business with the object of sustaining our reputation as dealers in the best goods of their kind.

Inviting you to personally inspect our stock and to thoroughly satisfy yourself of its superior selection, before buying at other places,

we remain

Yours very respectfully

KEUFFEL & ESSER.

# NOTICE.

The prices in this catalogue may vary from time to time, on account of fluctuations in Gold Premium and Market Rates.

In ordering any of the articles enumerated in this Catalogue it is only necessary to give the number with price of the article.

Every precaution being used in the packing of goods, no allowance can be made if goods are damaged, either by express or by enclosure through other houses.

Boxes if required for packing will be charged at cost.

Remittance of money can be made either by a bankdraft, payable to our order, in United-States or National Bank-Notes, sent by any of the Express-Companies, or by Post-Office Money-Order. — If Notes are sent by mail the letters should be registered.

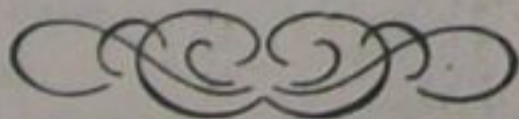
Remittances are in all cases at the risk of the sender.

For goods ordered per express and bill to be collected on delivery, a remittance of five Dollars is required.

Express-Charges for Collection will be added to the amount of the bill.

Goods ordered to be sent by mail must be prepaid and the return postage included in the remittance.

We are not responsible for goods sent by mail.



# DRAWING PAPER

in sheets.

1. Whatman's Paper.

Cold pressed, with a slight grain: all sizes.

Hot pressed, with smooth surface: " "

Rough, with very coarse grain; Royal and Imperial.

	Selected Best	Retree or Second quality
13 × 17 inch Cap . . . . . per quire	\$ 80	70
15 × 20 " Demy . . . . . "	1 00	85
17 × 22 " Medium . . . . . "	1 50	1 25
19 × 24 " Royal . . . . . "	2 00	1 60
19 × 27 " Super Royal . . . . . "	2 50	2 00
23 × 28 " Elephant . . . . . "	3 50	3 00
22 × 30 " Imperial . . . . . "	3 50	3 00
23 × 34 " Colombier . . . . . "	5 25	4 50
26 × 34 " Atlas . . . . . "	5 25	4 50
27 × 40 " Double Elephant . . . . . "	6 50	5 75
31 × 53 " Antiquarian . . . . . "	30 00	18 00

2. Whatman's Paper, extra thick, cold pressed

22 × 30 inch Imperial . . . . . per quire \$ 8 00

27 × 40 " Double Elephant . . . . . " 14 00

Whatman's Drawing Paper's „Selected Best“ and Retree are both of the same good quality, as they are made of the same material. The „Selected Best“ quality are the best sheets without imperfections. Both bear the impression:

Whatman or WhatmanTurkey Mills.

3. Antique or Eggshell Paper, best quality

15 × 20 inch Demy . . . . . per quire \$ 80

17 × 22 " Medium . . . . . " 1 10

19 × 24 " Royal . . . . . " 1 40

× 22 × 30 " Imperial . . . . . " 2 25

4. Machine Paper, good quality, used in schools for pencil and crayon drawings.

14 × 17 inch Cap . . . . . per quire \$ 40

15 × 20 " Demy . . . . . " 60

17 × 22 " Medium . . . . . " 75

19 × 24 " Royal . . . . . " 1 00

19 × 27 " Super Royal . . . . . " 1 20

22 × 30 " Imperial . . . . . " 1 50

27 × 40 " Double Elephant . . . . . " 2 50

5. J. D. Harding's Paper, for Watercolor Sketching

22 × 30 inch Imperial . . . . . per quire \$ 4 25

22 × 30 " " extra thick . . . . . " 8 40

6. English tinted Crayon Paper, various tints  
 22 × 30 inch, Imperial . . . . . per quire \$ 3 00  
 27 × 40 " Double Elephant . . . . . " " 4 50
7. German tinted Crayon Paper, various tints, rough grain  
 18½ × 24½ inch, Royal . . . . . per quire \$ 1 60
8. French tinted Crayon Paper, various tints, slight grain  
 19 × 25 inch, Royal . . . . . per quire \$ 1 50
9. French tinted Charcoal Paper, gray, blue, drab  
 19 × 25 inch, Royal . . . . . per quire \$ 75
10. English white Bristol Board, smooth surface.

	2 sheets	3 sheets	4 sheets
12½ × 16½ inch, Cap. . . . per doz	\$ 70	1 10	1 40
14½ × 18½ " Demy . . . . "	1 10	1 50	1 80
16½ × 20½ " Medium . . . . "	1 40	1 80	2 50
18 × 22½ " Royal . . . . "	2 00	2 75	3 50

11. French white Bristol Board, slight grain
- |                                    |      |      |      |
|------------------------------------|------|------|------|
| 12½ × 16½ inch, Cap. . . . per doz | 70   | 1 10 | 1 40 |
| 13½ × 17½ " Demy . . . . "         | 1 00 | 1 40 | 1 75 |
| 17 × 21 " Medium . . . . "         | 1 40 | 1 80 | 2 20 |
| 18½ × 24½ " Royal . . . . "        |      | 2 50 | 3 00 |

12. French tinted Bristol Board, thin  
 19 × 24½ inch, Royal . . . . . per doz \$ 1 50

13. French tinted Bristol Board, thick  
 19 × 24½ inch, Royal . . . . . per doz \$ 2 50

14. Bondpaper, for tracings, very tough
- |                        |          |          |
|------------------------|----------|----------|
| 16 × 24.               | 19 × 24. | 19 × 30. |
| per 100 sheets \$ 3 75 | 4 00     | 5 00     |

15. English Parchment
- |                 |          |          |              |
|-----------------|----------|----------|--------------|
| 16 × 20.        | 18 × 24. | 20 × 24. | 26 × 31 inch |
| per doz \$ 7 50 | 9 00     | 10 00    | 16 00        |

16. Gelatine or Glasspaper
- |              |      |        |       |
|--------------|------|--------|-------|
| 13 × 19      | thin | medium | thick |
| per sheet \$ | 30   | 35     | 45    |

17. Transfer Paper, blue, red and black  
 11½ × 18½ inch, Royal . . . . . per sheet \$ 15

18. White Mounting Board  
 22 × 28 inch, according to thickness . . . . . per sheet 15 to 25

19. Chagrin Board, for Passepartouts, white and tinted  
 22 × 28 inch . . . . . per sheet \$ 25

# DRAWING PAPER

continuous in Rolls.

30.	Detail Paper, extra tough, buff color.			
	thin, medium, thick 36, 40, 44, 48, 54 inch wide,			
	in rolls of 50 to 100 lbs. . . . .		per lb. \$	16 to 18
	according to thickness and width . . . . .		per yard \$	10 to 25
			per lb	per yard
32.	White Roll Drawing Paper, thin			
	56 inch wide, in rolls of 30 to 40 lbs.		\$ 35	\$ 25
33.	do.	do. medium		
		36 inch wide, in rolls of 30 to 40 lbs.	40	25
		47 inch wide, in rolls of 30 to 40 lbs.	40	30
		56 inch wide, in rolls of 30 to 40 lbs.	40	35
34.	do.	do. thick		
		56 inch wide, in rolls of 30 to 40 lbs.	45	40
35.	do.	do. medium, fine grain		
		57 inch wide, in rolls of 30 to 40 lbs.	50	40
35½.	do.	do. thick; fine grain		
		57 inch wide, in rolls of 30 to 40 lbs.	50	50
36.	do.	do. medium, extra tough		
		56 inch wide, in rolls of 30 to 40 lbs.	55	50
37.	do.	do. thick, extra tough		
		56 inch wide, in rolls of 30 to 40 lbs.	55	70
38.	White, Antique or Eggshell Drawing Paper,			
	very best quality, 58 inch wide			
	thin, rough surface, in rolls of 30 to 40 lbs.		55	45
39.	do.	medium do. do. 44 inch " "	55	40
39.	do.	medium do. do. 58 " " "	55	55
40.	do.	thick do. do. 58 " " "	55	75
41.	do.	medium, smooth do. 58 " " "	55	55
42.	White, Roll Drawing Paper, thick			
	42 inch wide, in rolls of 30 to 40 lbs.		55	45
	54 " " " " " 30 " 40 "		55	70
43.	Tinted	do. slight grain		
		56 inch wide, in rolls of 30 to 40 lbs.	50	50
44.	Tinted	do. slight grain		
		54 inch wide, in rolls of 10 yards . per roll	\$ 3 50	
45.	Tinted Drab Drawing Paper (english), very good quality,			
	54 inch wide, slight grain, in rolls of		lb	yd
	30 to 40 lbs.		\$ 50	50

# DRAWING PAPER

## WHITE.

### MOUNTED ON MUSLIN

in rolls of 10 yards.

		per roll	per yard
50.	Best Quality, medium thickness,		
	36 inch wide . . . . .	\$ 9 00	\$ 1 00
	42 " " . . . . .	10 00	1 20
	54 " " . . . . .	12 00	1 40
51.	do. do. thick, rough or smooth surface		
	42 inch wide . . . . .	12 50	1 45
	54 " " . . . . .	15 00	1 75
52.	Antique or Eggshell, medium, rough surface,		
	36 inch wide " " " . . . . .	11 00	1 30
	42 " " " " " . . . . .	12 50	1 45
	x 54 inch wide, rough or smooth surface	14 00	1 60
	58 " " . . . . .	16 00	1 80
53.	Antique or Eggshell, thick, rough surface		
	54 inch wide . . . . .	16 00	1 80
	58 " " . . . . .	18 00	2 00
54.	Whatman's Drawing Paper, mounted		
	18 x 24 inch Royal . . . . .	per sheet \$	30
	22 x 30 " Imperial . . . . .	"	50
	27 x 40 " Dble. Elephant . . . . .	"	75
	31 x 53 " Antiquarian . . . . .	"	1 50

Large pieces for City, County or State-Maps mounted to order.

## TRACING OR VELLUM CLOTH.

Both sides glazed, and

one side glazed, the other dull suitable for pencil-marks.

60.	Sagar's Patent, white, in rolls of 24 yards			
	18.	30.	36.	42 inch wide
	per roll \$ 5 00	9 00	10 00	14 00
61.	Imperial, white, in rolls of 24 yards			
	30.	36.	42 inch wide	
	per roll \$ 9 00	10 00	14 00	





## TRACING PAPER

in sheets.

63.	French vegetable, very tough and transparent		
	18 × 17 inch Cap thin . . . . .	per quire	\$ 1 20
	15 × 20 " Demy thin . . . . .	"	1 50
	18 × 24 " Royal thin and thick . . . . .	"	2 50
	21 × 27 " Imperial thin and thick . . . . .	"	3 30
	27 × 38 " Double Elephant thin . . . . .	"	9 00
64.	French common		
	20 × 30 inch medium . . . . .	per quire	\$ 1 50
	30 × 40 " " . . . . .	"	3 00
65.	do. 30 × 40 " thick . . . . .	"	3 50
66.	Fine, glazed, very transparent and tough,		
	30 × 40 inch . . . . .	"	4 50
67.	Extra stout, very tough, suitable for machinists		
	30 × 40 inch . . . . .	"	4 50

## TRACING PAPER

continuous.

70.	French, best vegetable		
	54 inch wide, in rolls of 22 yards . . . . .	per roll	\$ 5 00
71.	French common		
	42 inch wide, in rolls of 22 yards . . . . .	per roll	\$ 3 50
72.	do. stout, 42 inch wide, in rolls of 22 yards . . . . .	"	4 00
73.	German, very best, very tough and transparent		
	54 inch wide, in rolls of 30 yards . . . . .	per roll	\$ 8 00
74.	German, not prepared, for transferring		
	54 inch wide, in rolls of 44 yards . . . . .	per roll	\$ 6 00
76.	Extra stout, very tough, suitable for machinists		
	40 inch wide, in rolls of 20 yds. . . . .	per roll	\$ 4 50

## SPECIFICATION PAPER.

98.	Extra fine Legal Cap, ruled . . . . .	per ream	\$ 4 50
99.	" " do. " thick . . . . .	" "	5 50

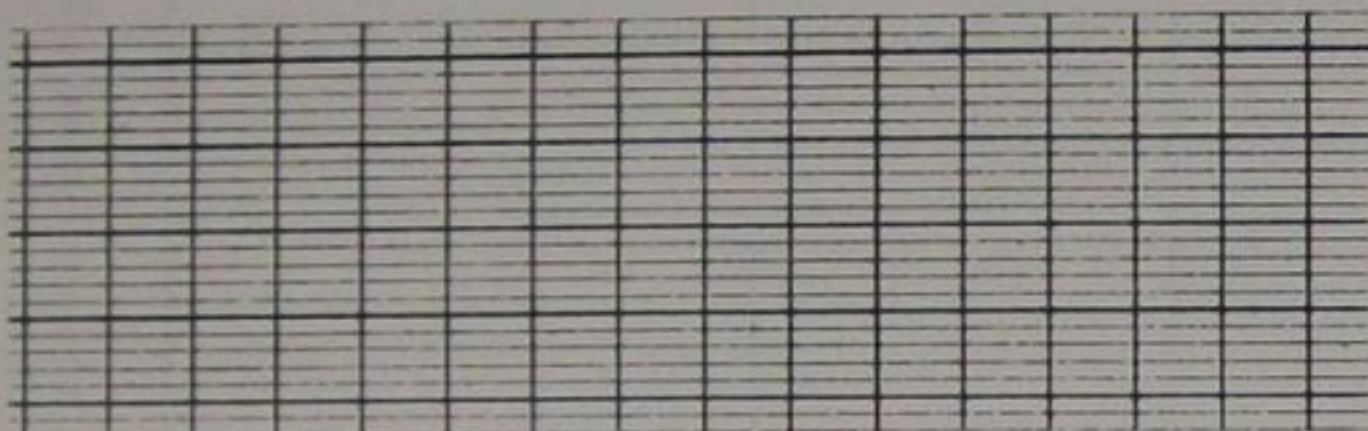
SAMPLES OF

## DRAWING PAPERS

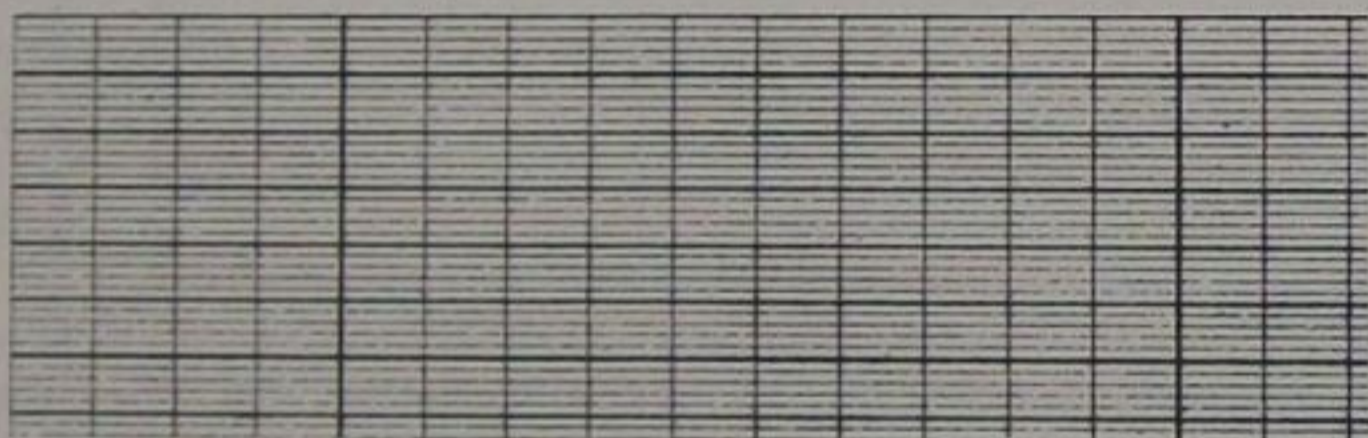
will be sent on application.

# PROFILE PAPER

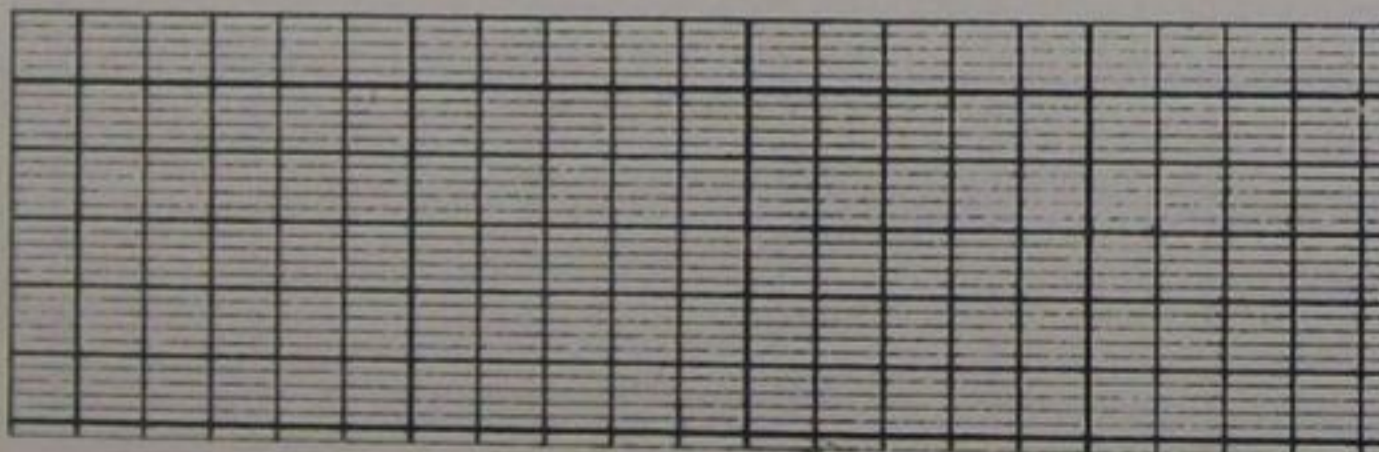
printed in orange or green.



- 80. Plate A. 15 × 42 inch, horizontal ruling 4, vertical ruling 20 to one inch { per quire \$ 8 50  
per sheet \$ 40
- 83. " A. continuous, 22 inch wide . . . . . per yard \$ 30
- 85. " A. " 22 " " mounted on Cloth " 75

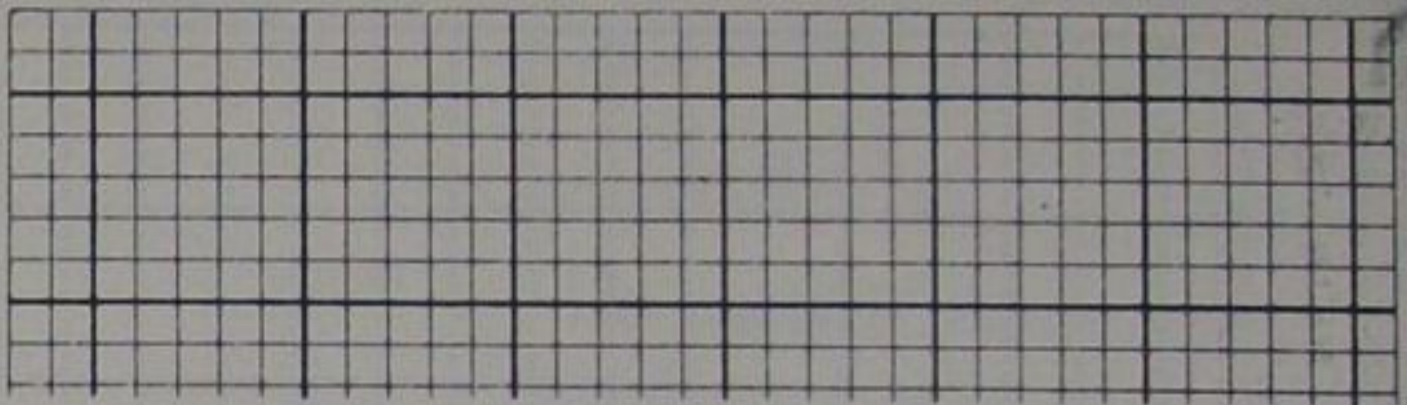


- 81. Plate B. 13 1/2 × 42 inch, horizontal ruling 4, vertical ruling 30 to one inch { per quire \$ 8 50  
per sheet \$ 40
- 84. " B. continuous, 22 inch wide . . . . . per yard \$ 30
- 86. " B. " 22 " " mounted on Cloth " 75

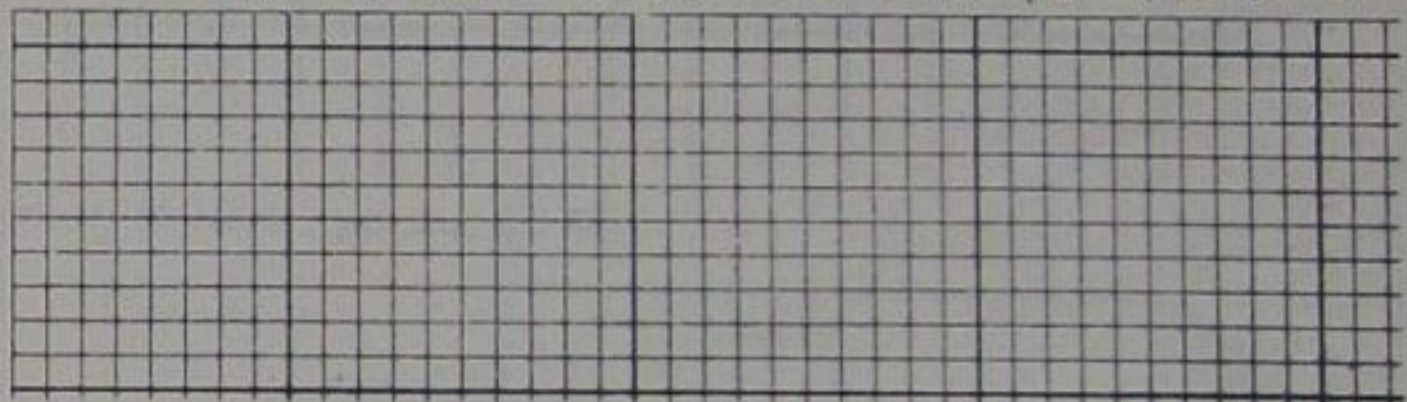


- 82. Plate C. 15 × 42 inch, horizontal ruling 5, vertical ruling 25 to one inch { per quire \$ 8 50  
per sheet \$ 40

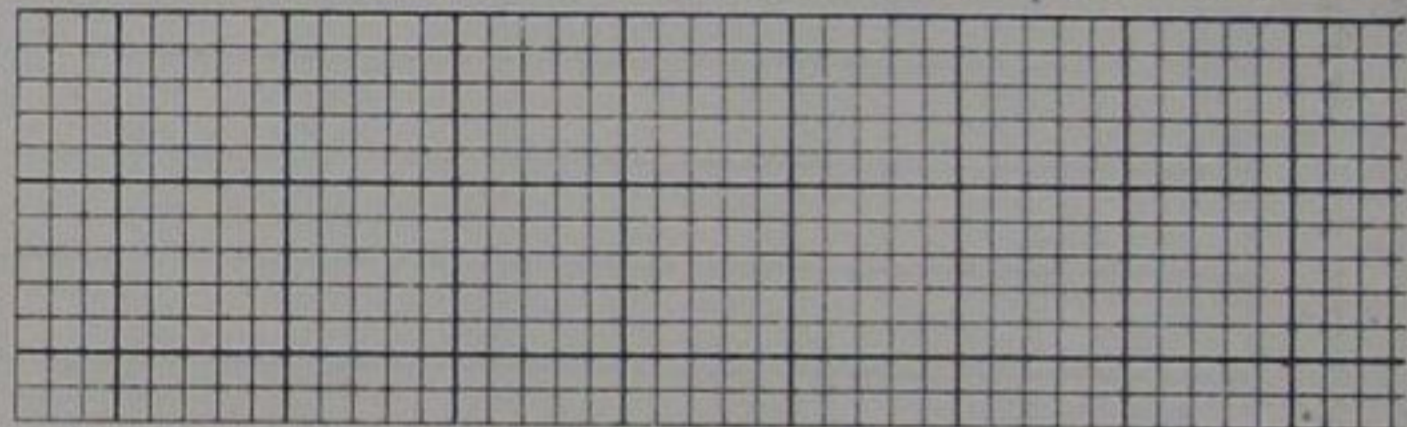
## CROSS SECTION PAPER.



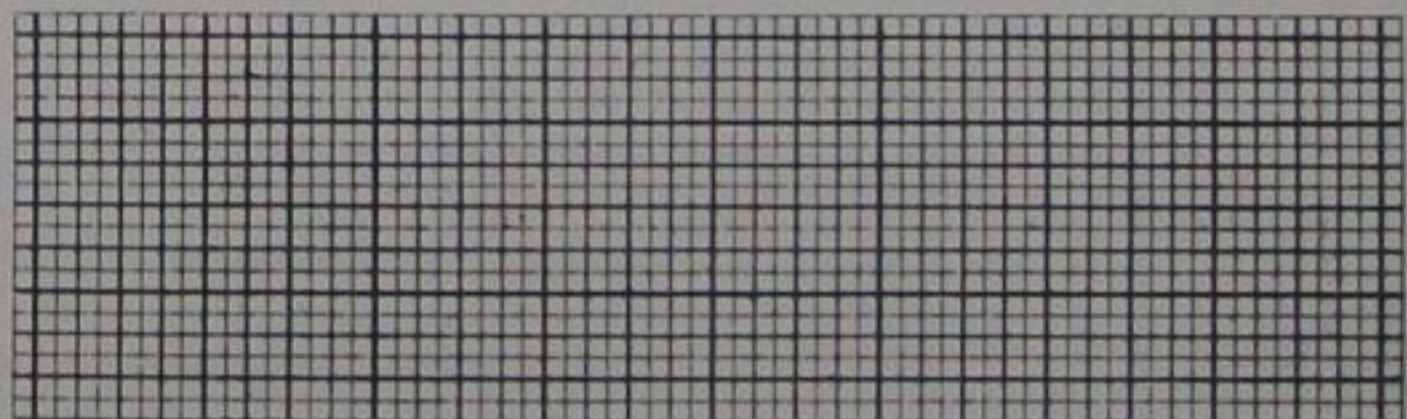
91. Cross Section 8 feet to one inch, dimensions of | per quire \$ 5 00  
 engraving  $16\frac{1}{2} \times 22$  inch, printed in orange | per sheet \$ 25



92. Cross Section  $10 \times 10$  to one inch, dimensions of | per quire \$ 5 00  
 engraving  $20 \times 23\frac{1}{2}$  inch, printed in blue | per sheet \$ 25



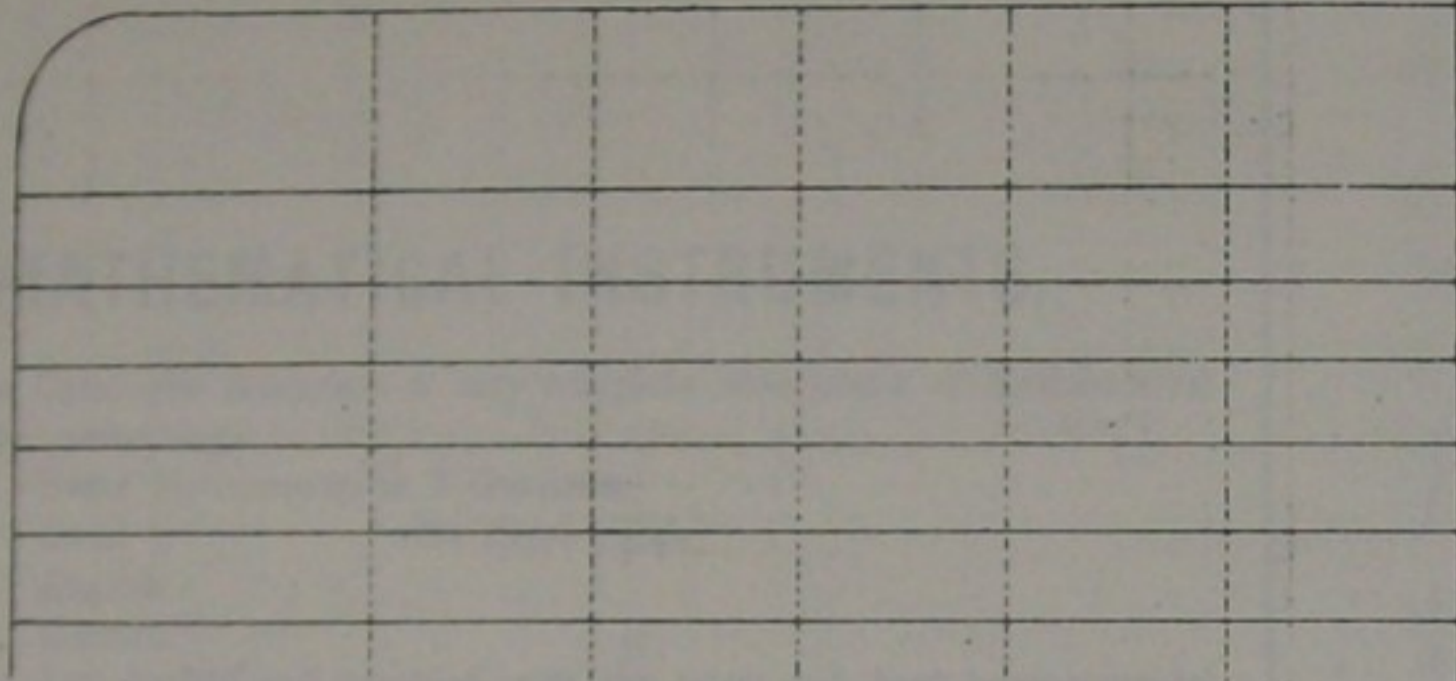
93. Cross Section  $5 \times 5$  to  $\frac{1}{2}$  inch, dimensions of en- | per quire \$ 5 00  
 graving  $16 \times 20$  inch, printed in orange | per sheet \$ 25



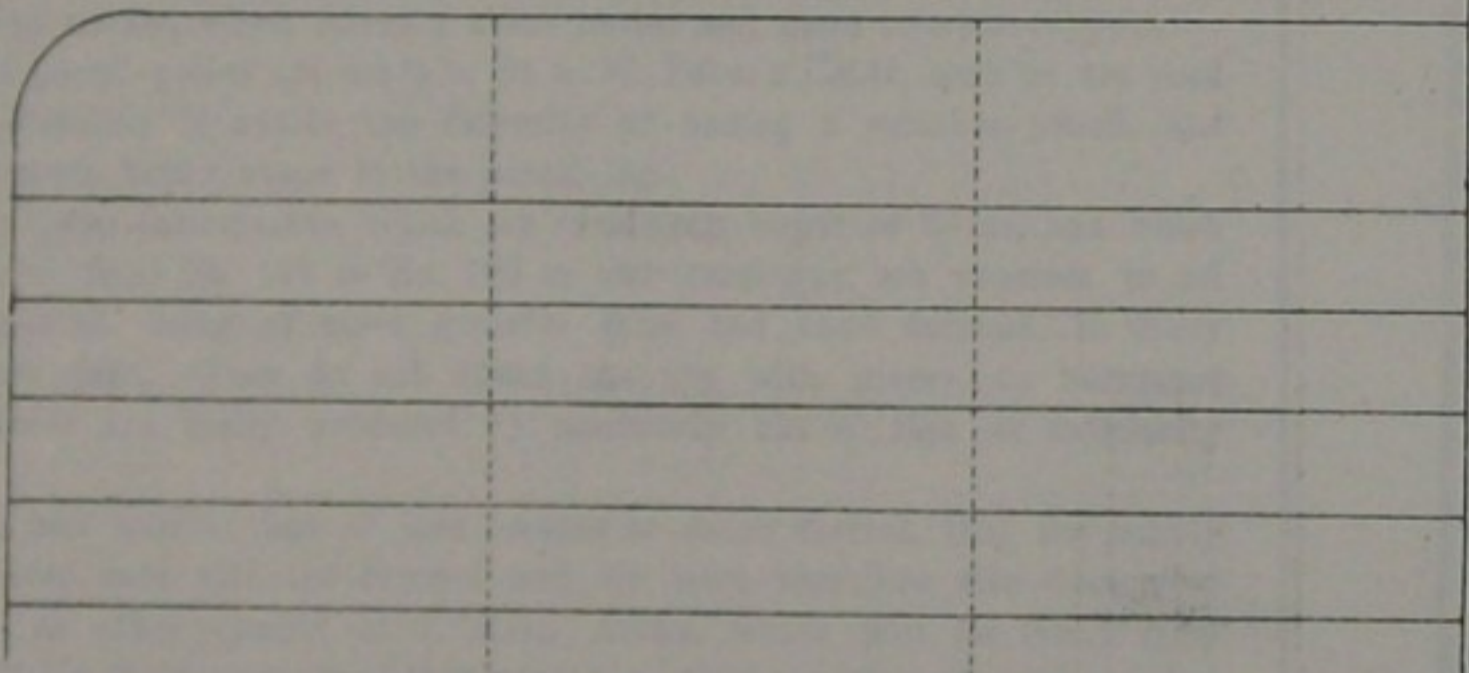
97. Cross Section  $16 \times 16$  to one inch, continuous  
 24 inch wide, printed in orange per yard \$ 40  
 94. Cross Section  $5 \times 5$  to one inch,  $16 \times 21$  ruled in blue per quire \$ 1 50  
 95. do.  $10 \times 10$  " "  $16 \times 21$  " " " " " 1 50  
 96. do.  $8 \times 8$  " "  $16 \times 21$  " " " " " 1 50  
 89. do. millimetre  $18 \times 24$  printed orange per sheet 25

## ENGINEER'S

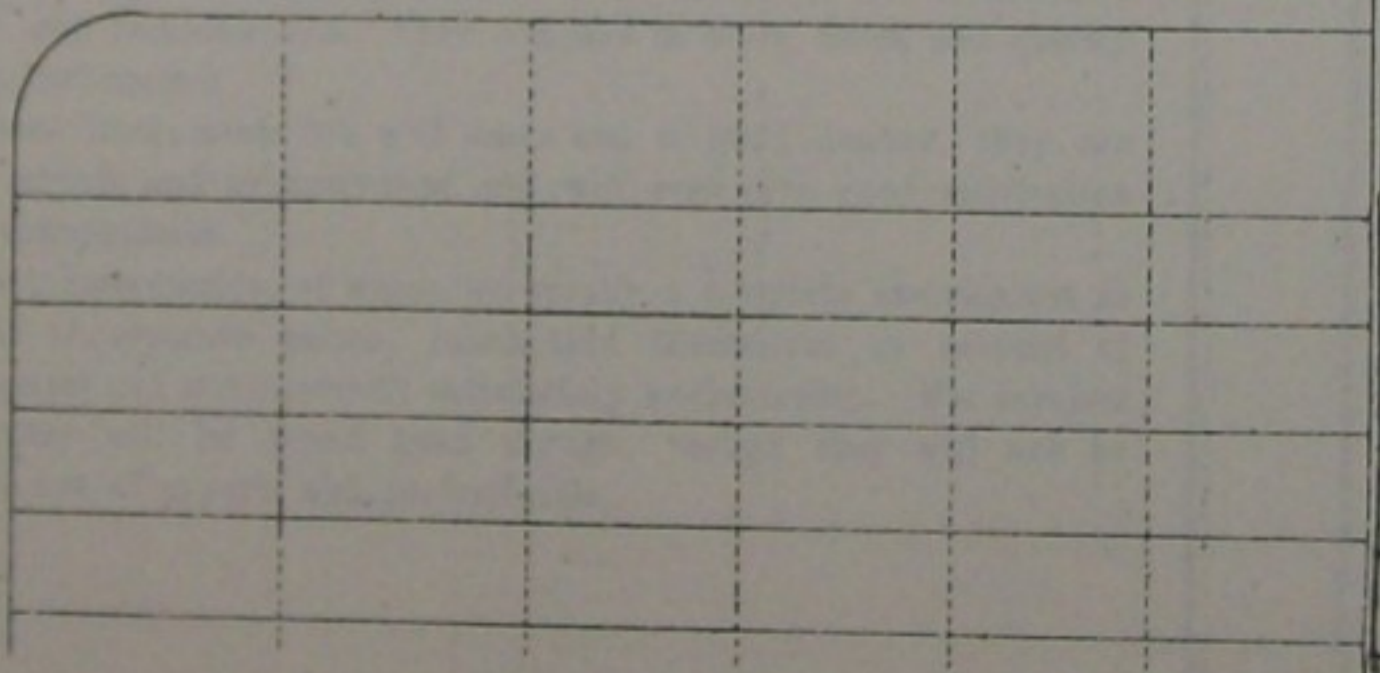
THE FULL LINES ARE RULED BLUE, THE DOTTED LINES RED.



100. Field Book,  $4\frac{1}{2} \times 7\frac{1}{2}$  inch, bound in leather,

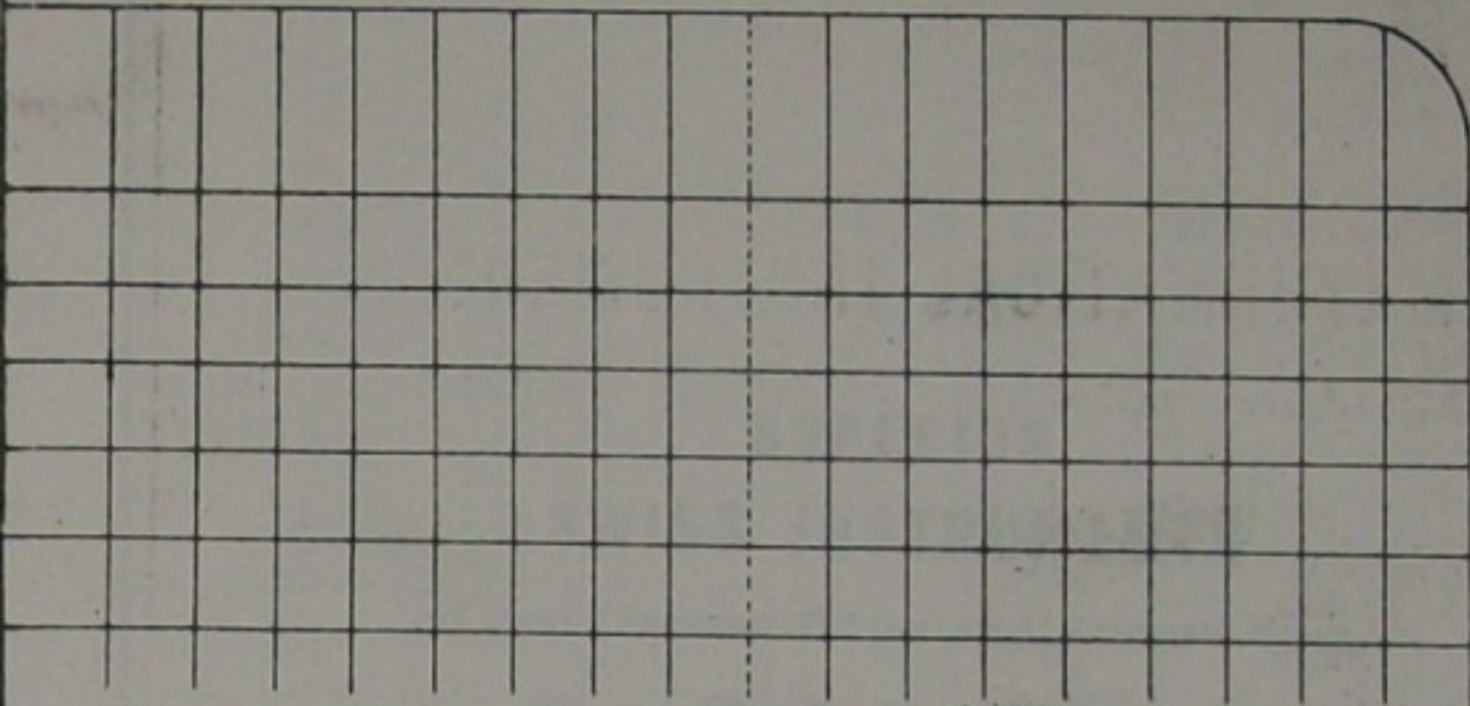


101. Transit Book,  $4\frac{1}{2} \times 7\frac{1}{2}$  inch, bound in leather,

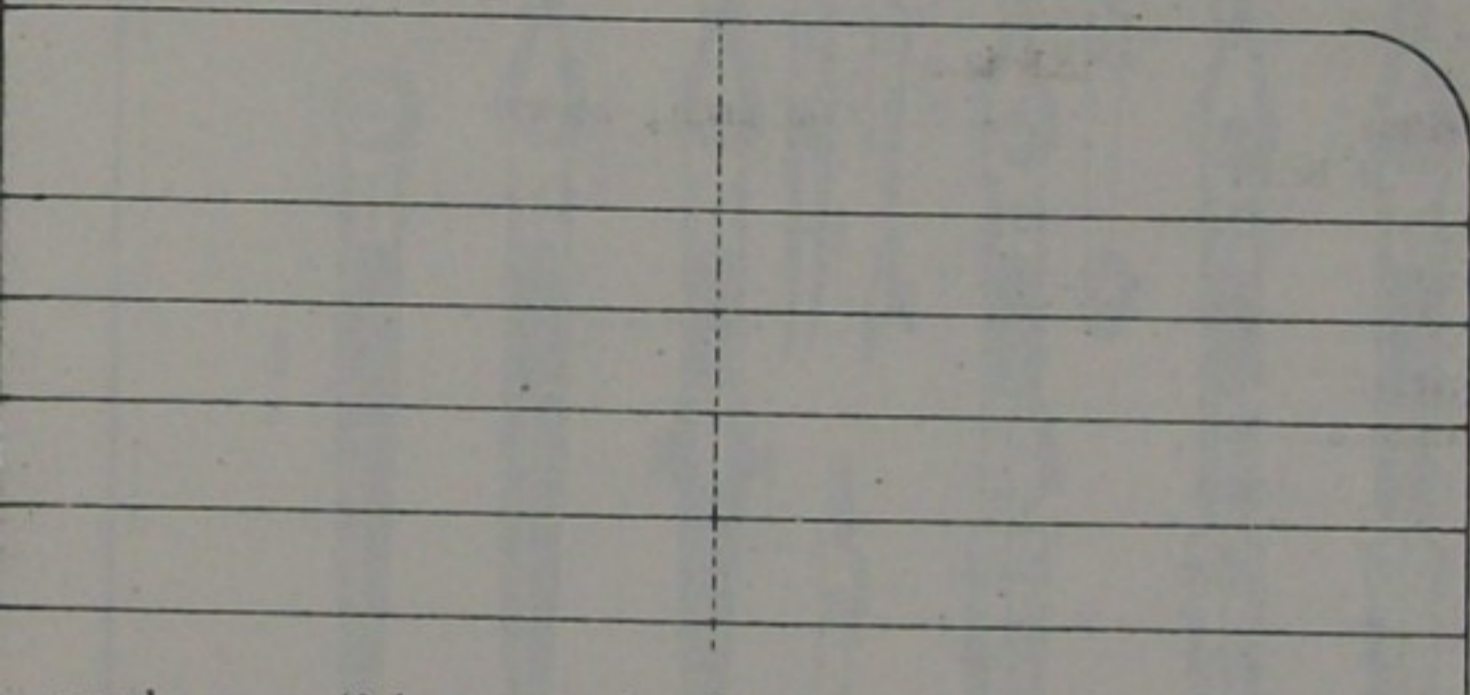


102. Level Book,  $4 \times 6\frac{1}{2}$  inch, bound in leather,

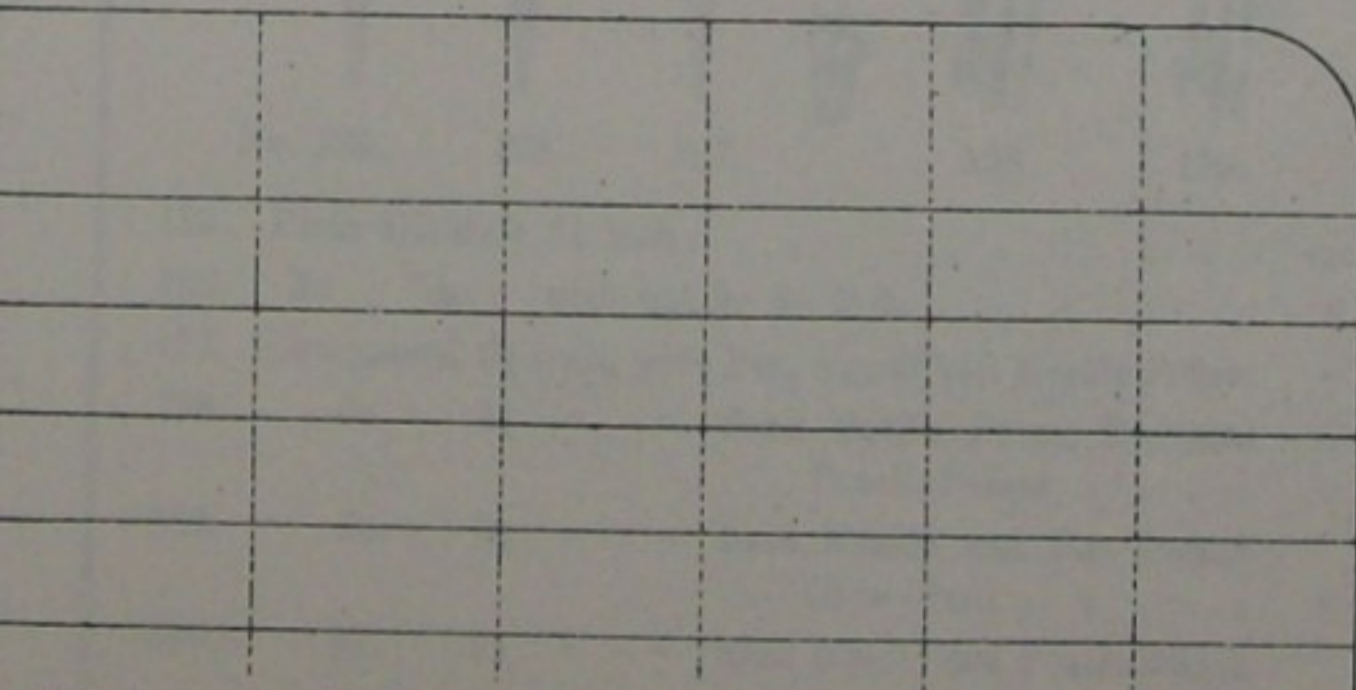
# FIELD BOOKS.



round corners, 80 leaves per doz \$ 7 00



round corners, 40 leaves per doz \$ 6 00



round corners, 80 leaves per doz \$ 6 50

## MATHEMATICAL INSTRUMENTS.

This Catalogue comprises a very complete assortment of Mathematical Instruments, containing:

Swiss Instruments, in 2 Qualities,  
 Swiss " with Pivot Joint,  
 English "  
 German "

of the very best quality and provided with the latest and best improvements.

The needle-points have in place of the common, oldfashioned needle, a shouldered needle, which forms a much better and more reliable support.

The pencil-points are made to fit A. W. Faber's Leads, such as are used in Artist-Pencils; it avoids the difficulty of finding a suitable pencil, and permits a much better shape to the pencil-leg.

Our Swiss Instruments, which are exclusively imported by us, and which will be found from No. 124 to No. 190 in this catalogue, are superior to all others imported, being of more graceful form and hand finished, in every respect first class. They do not offend the eye with glossy or burnished surfaces which are easily produced by machinery but a sign of inferiority with all.

The best Quality has of late become so much desired, that the supply could not keep pace with the demand and we were therefore also compelled to import an other quality of J. Kern Aarau, which will be found from No. 2000 to No. 2051 page 26 of this catalogue; they are also of good quality.

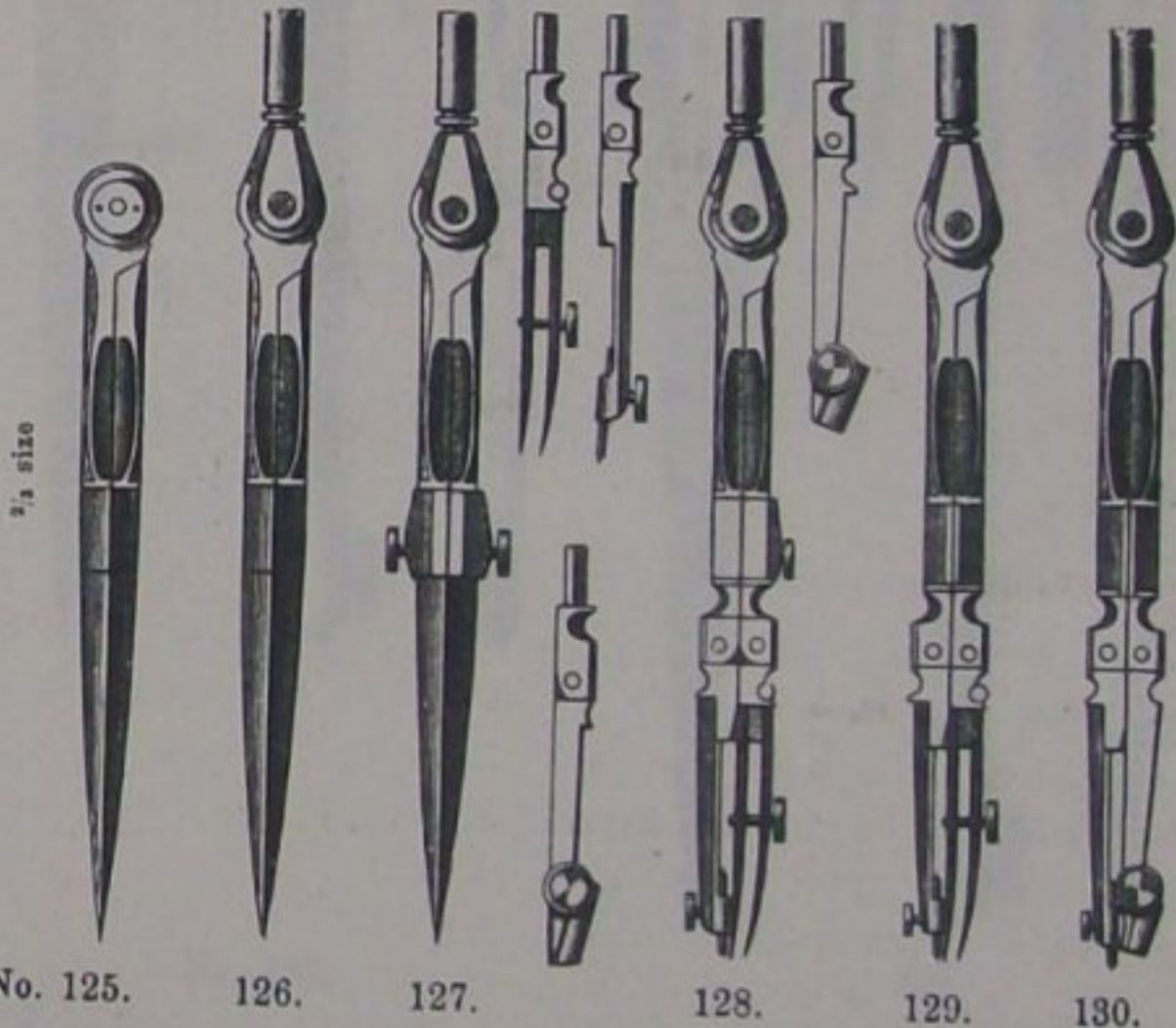
The Pivot-Joint-Instruments, known under the name of „Alteneder's Patent“, can be well recommended. They compare in style, finish and quality with our Swiss Instruments.

The German Instruments are well made and of good quality, they are mostly used in schools and by apprentices and will even give good satisfaction to professional draughtsmen.

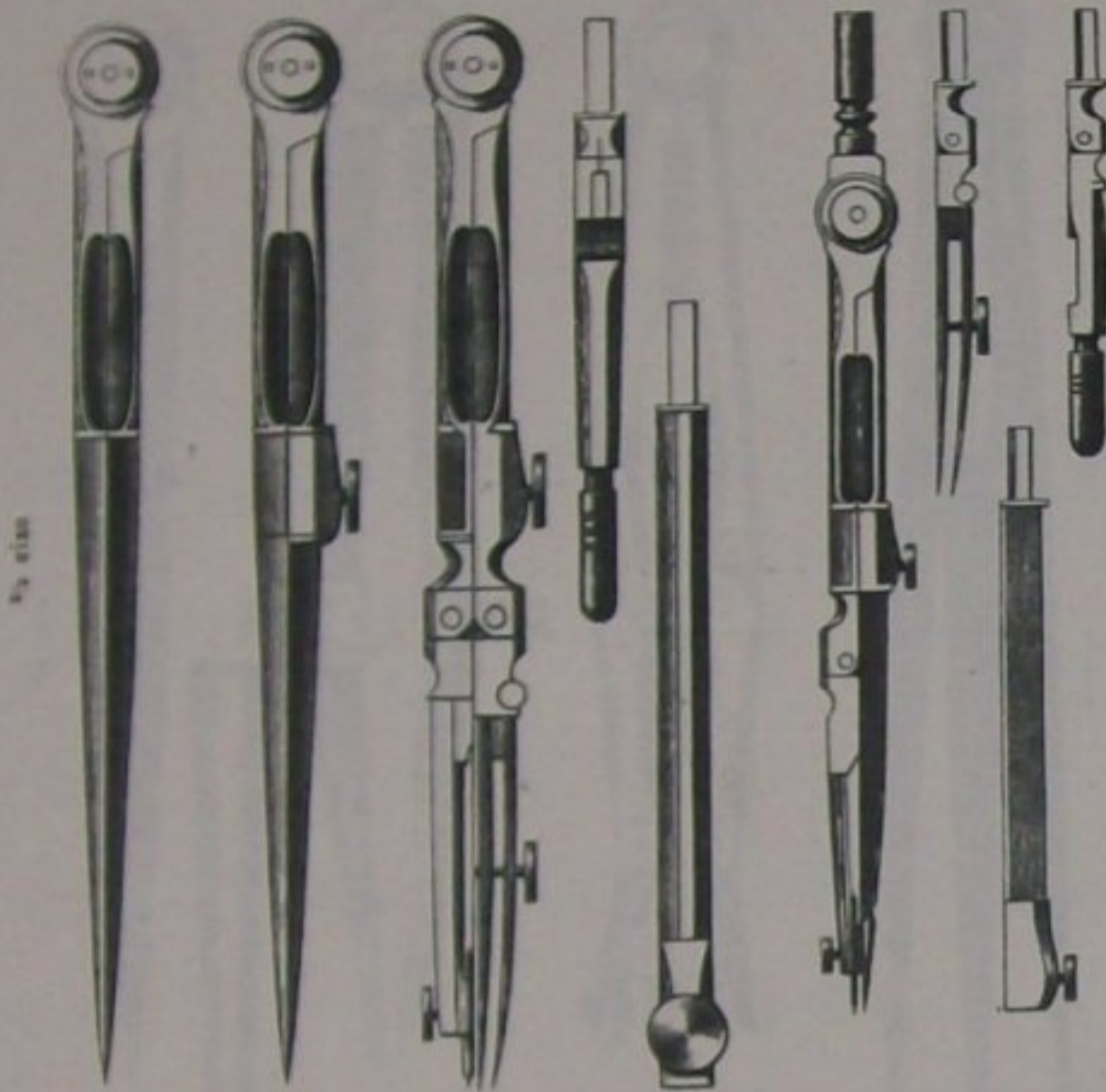
The French Instruments, of which we specify a complete assortement in cases as well as of separate pieces, recommend themselves on account of their great cheapness and comparatively satisfactory workmanship. For scholars and apprentices they will be found good enough, though they will not be sufficient for the use of experts and professionals.

## SUPERIOR SWISS INSTRUMENTS

of best German Silver and English Steel.



No. 125.	126.	127.	128.	129.	130.	
125.	do.	do.	do.	do.	do.	
Plain Dividers	do.	Compasses, 3 1/4 inch,	do.	do.	do.	
3 1/4 inch . . . . .	do.	with Pen, Pencil and Needle Points	3 1/4 " " fixed Needle Point, Pen and	3 1/4 " " fixed Needle and Pen Points	3 1/4 " " fixed Needle and Pencil Points	each \$ 2 00
	with handle 3 1/4 inch . . . . .		Pencil-Points . . . . .	(Bow-Pen) . . . . .	(Bow Pencil) . . . . .	" 2 20
			" 5 75	" 3 75	" 3 75	



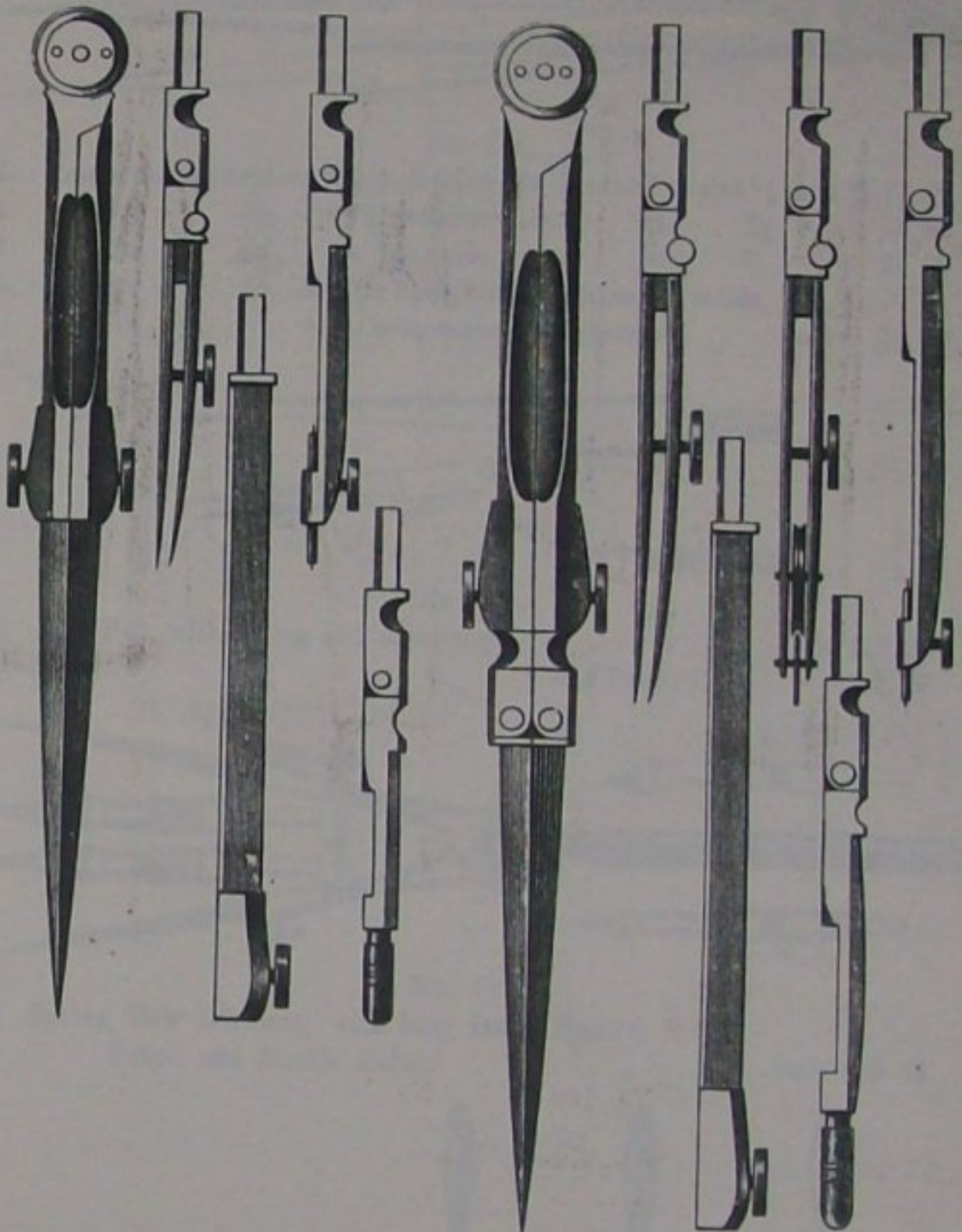
No. 131.                      133.                      134.                      134 1/2.

131.	Plain Dividers, 5 inch . . . . .	each	\$ 2 40
132.	do. do. 6 " . . . . .	"	2 80
133.	Hairspring Dividers, 5 inch . . . . .	"	3 20
133 1/2.	do. do. 3 " with handle . . . . .	"	2 90
134.	Compasses, 5 1/4 inch, with fixed Needle Point, Pen, Pencil Points and Lengthening Bar . . . . .	"	7 50
134 1/2.	do. 4 1/4 inch, with fixed Needle Point, Steel, Pen, Pencil Points and Lengthening Bar . . . . .	"	8 00





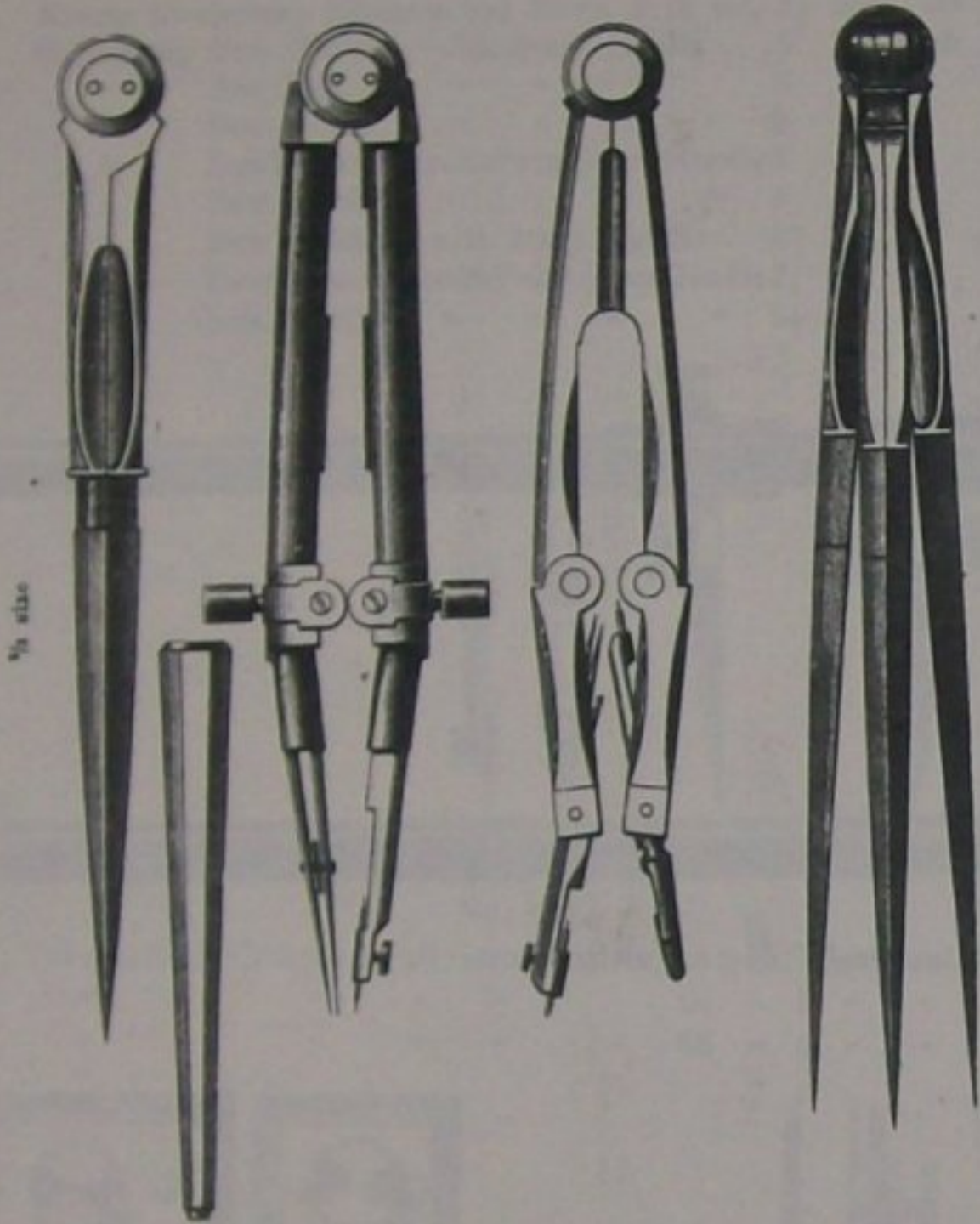
3/8 size



No. 135.

137.

- |      |                    |   |              |
|------|--------------------|---|--------------|
| 135. | Compasses, 6 inch, | with Pen, Pencil, Needle Points and Lengthening Bar . . . . .                                 | each \$ 9 00 |
| 136. | do. 6 1/2 "        | with joint in each leg, Pen, Pencil, Needle Points and Lengthening-Bar . . . . .              | " 10 25      |
| 137. | do. 7 "            | with joint in each leg, Pen, Pencil, Needle Points, Lengthening Bar and Dotting Pen . . . . . | " 12 00      |



No. 138.

No. 139

No. 140.

No. 141.

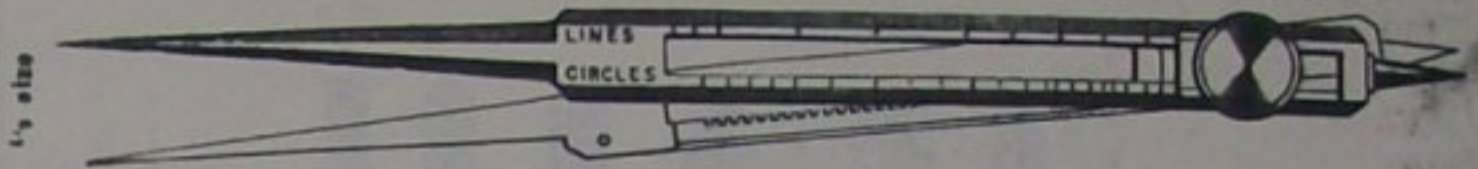
138.	Pocket Dividers, with sheath, 5 inch . . . . .	each \$ 3 15
139.	Pillar Compasses, with handles, Pen and Pencil-Points to draw out, forming small Bows if required . . . . .	" 10 50
140.	Pocket Compasses, with folding Points . . . . .	" 9 50
141.	Triangular Compasses, for taking off three points . . . . .	" 5 60

1/8 size



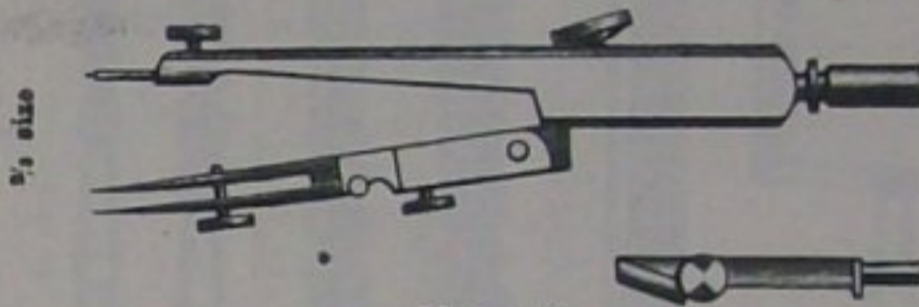
No. 142.

142.	Whole and Half Dividers, 7 1/4 inch. . . . .	each \$ 4 10
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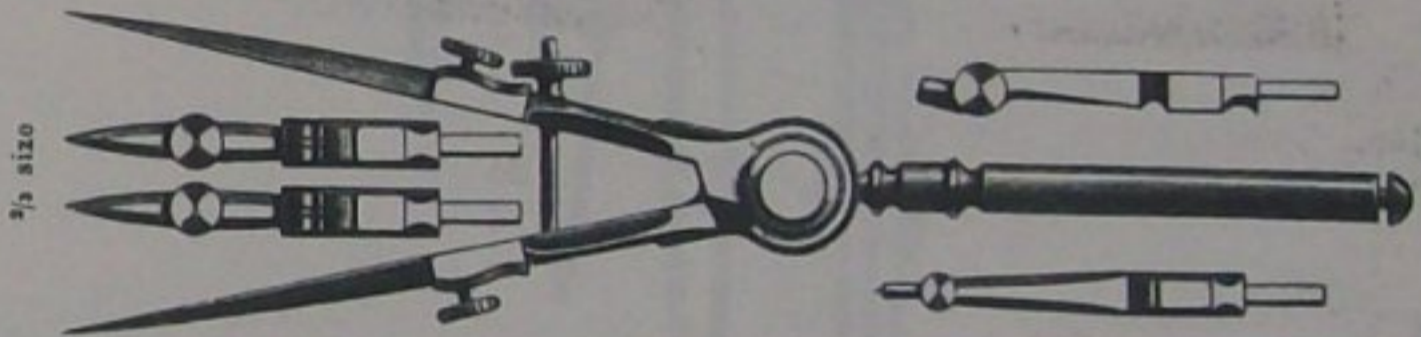
No. 144.

- |      |  |             |          |
|------|--|-------------|----------|
| 143. | Proportional Dividers, finely divided for lines and circles                          | 7 1/4 inch  | \$ 11 00 |
| 144. | do. do. with rackmovement  | do. 8 1/4 " | 13 50    |
| 145. | do. do. " movable points   | do. 9 "     | 17 00    |
| 146. | do. do. div. for lines, circles, planes and solids, with micrometer adjustment . . . | each        | 18 00    |



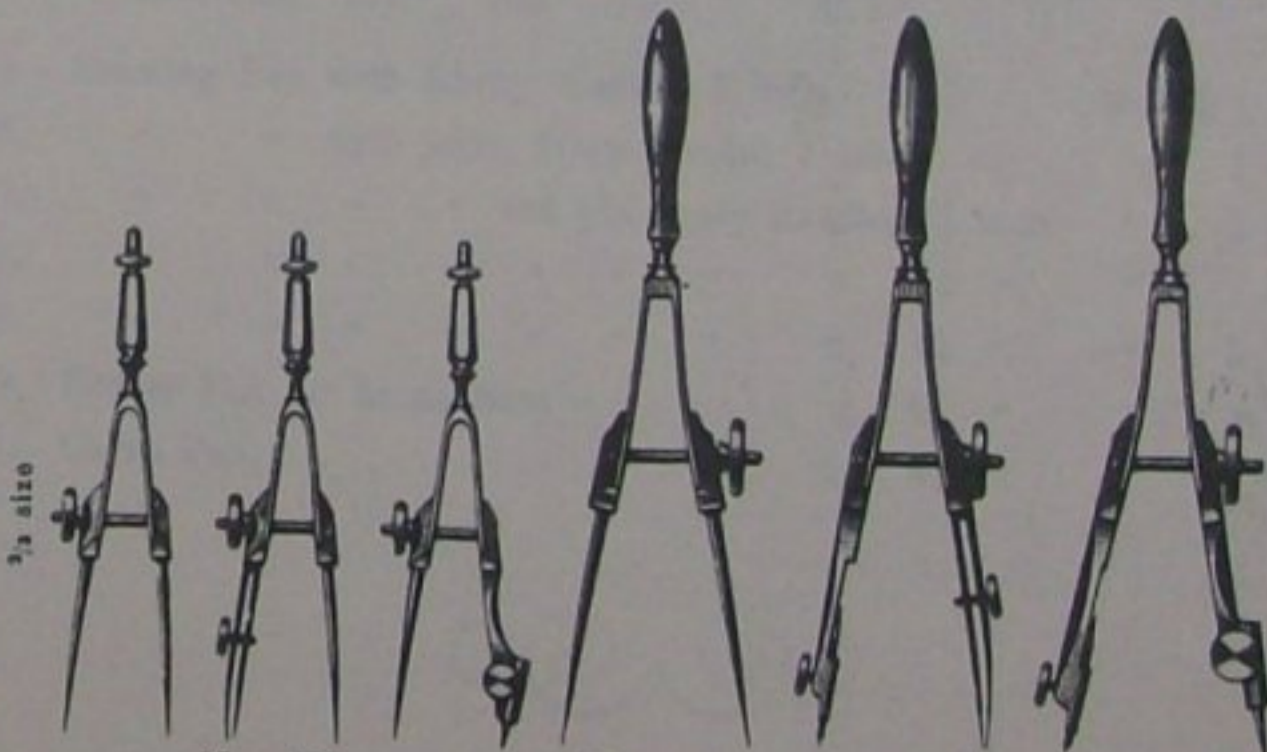
No. 148.

- |      |  |      |         |
|------|--|------|---------|
| 147. | Bow Pen, with spring and adjusting screw . . . . . | each | \$ 2 80 |
| 148. | do. " " " " " and Pencil Point "                   |      | 3 75    |



No. 149.

- |      |  |      |         |
|------|--|------|---------|
| 149. | Spring Bow Dividers, with long Ivory Handle, 2 Pen, Pencil and Needle Points . . . . . | each | \$ 8 75 |
|------|--|------|---------|



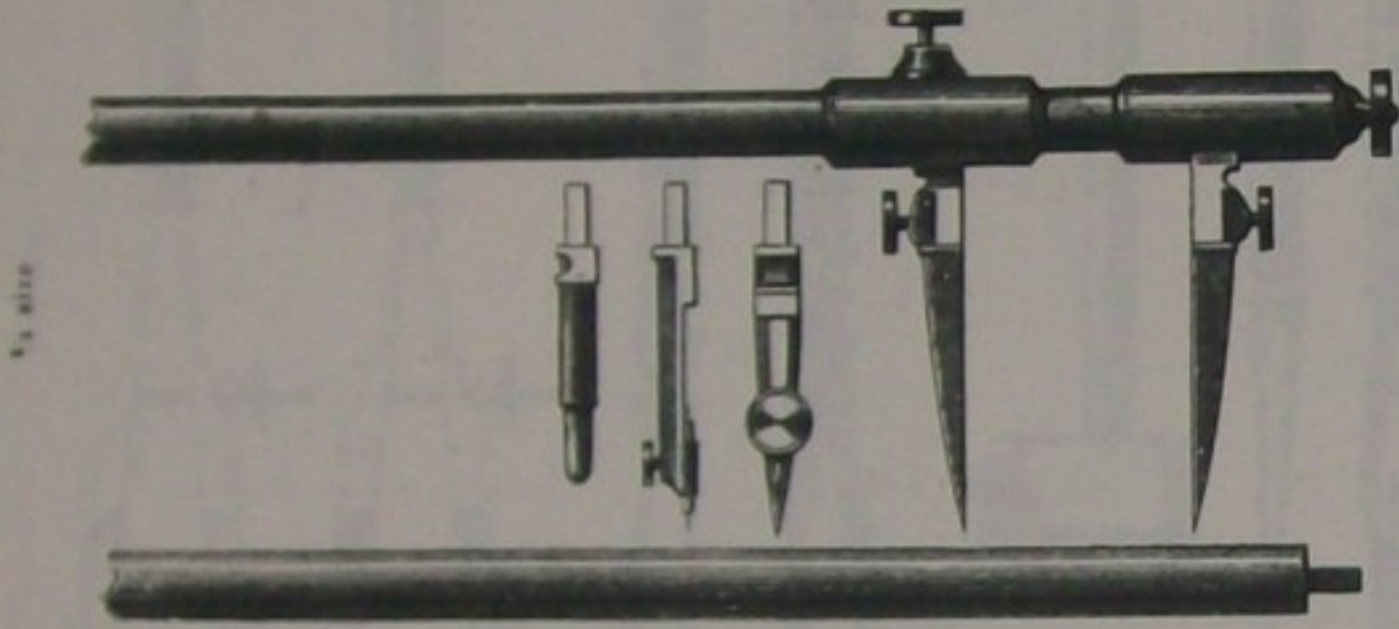
No. 150.

No. 151.

No. 154.

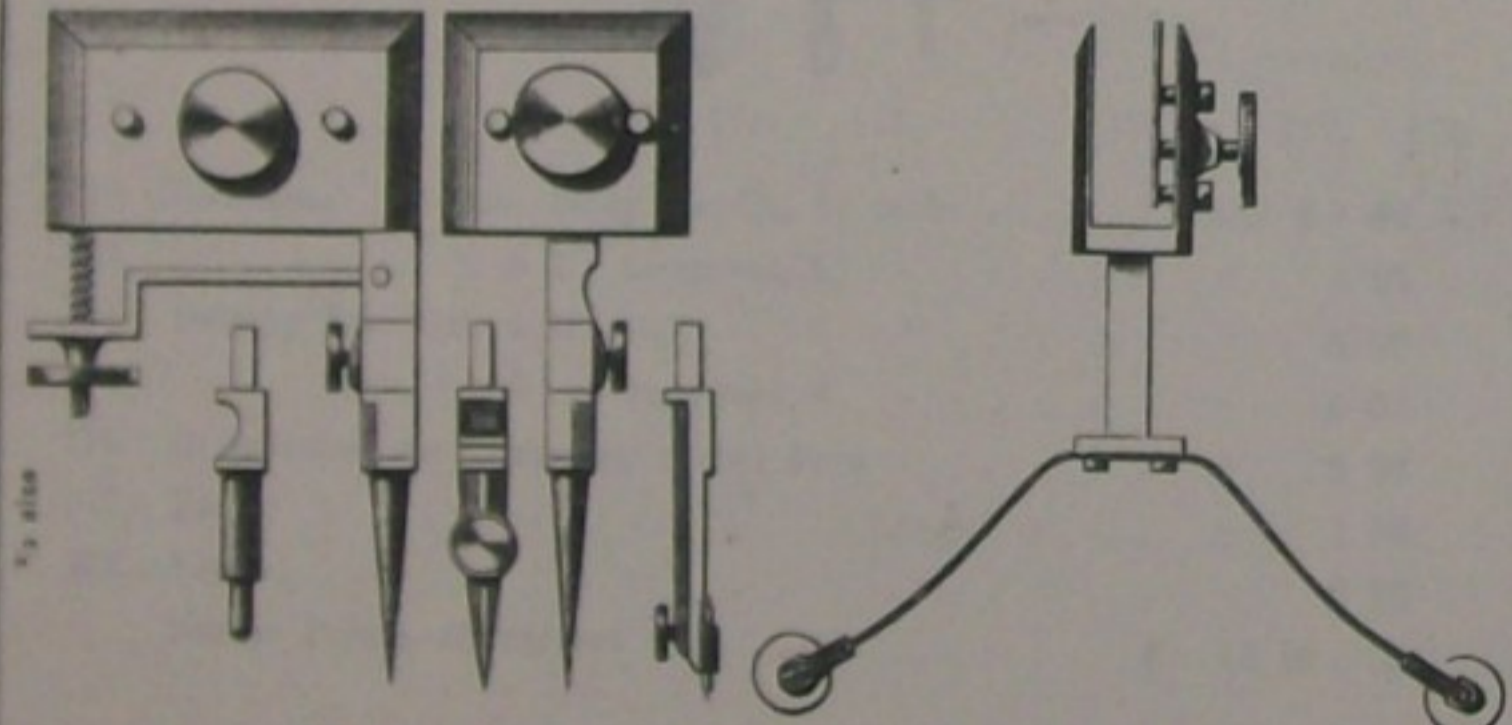
No. 155.

150.	Minute Steelspring Dividers and Bows, 3 in set, 2½ inch	set	\$ 9 00
151.	Steelspring Bow Dividers, with Ivory Handle	3 " each	\$ 2 50
152.	" Bow Pen, " " "	3 " "	2 75
153.	" Bow Pencil " " "	3 " "	2 75
154.	" Bow Pen, with Needle Point, Ivory Handle	3 " "	3 25
155.	" Bow Pencil " " " " "	3 " "	3 25
156.	" Bow Dividers, with Ivory Handle	3½ " "	2 75
157.	" Bow Pen, with Needle Point, Ivory Handle	3½ " "	3 50
158.	" Bow Pencil " " " " "	3½ " "	3 50



No. 159.

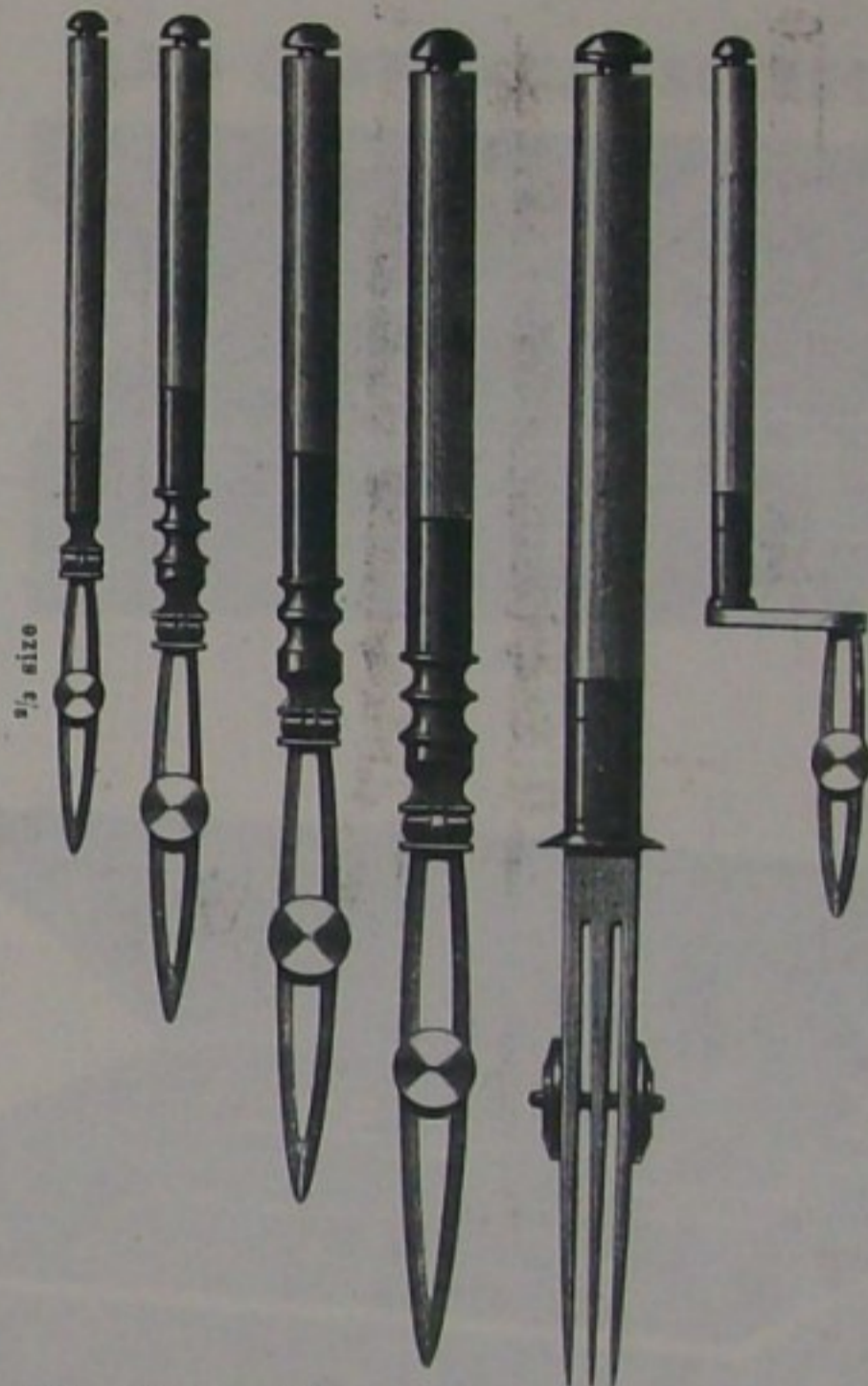
159.	Tubular Beam Compasses, all German Silver, 18 inch,	2 bars each	\$ 12 50
160.	" " " " " " " " 24 "	3 " "	15 00
161.	" " " " " " " " 36 "	3 " "	20 00



No. 162.

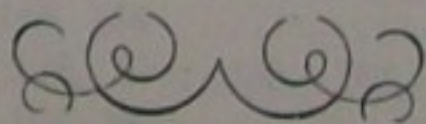
No. 163.

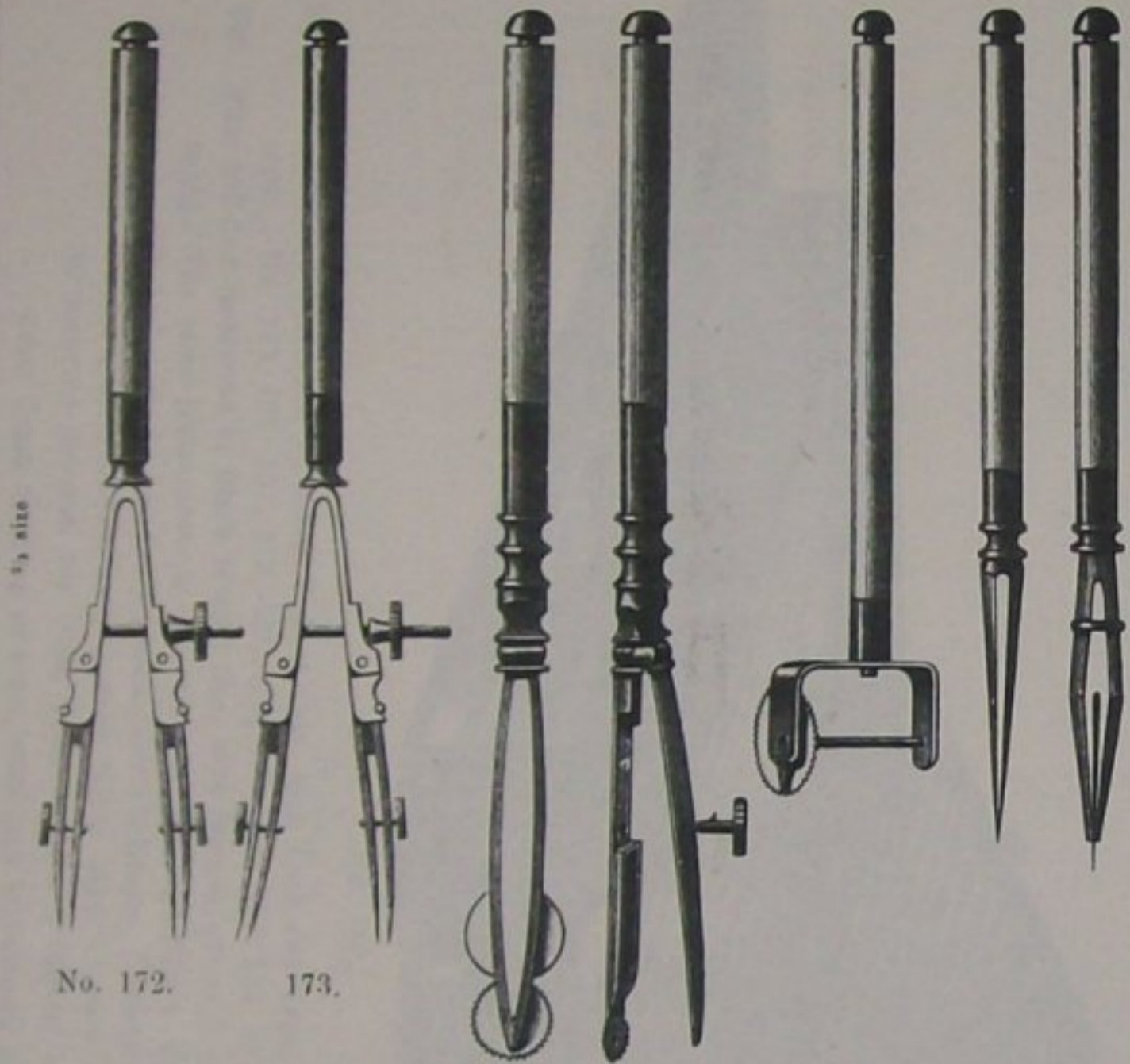
162.	Beam Compasses, to fit on any straight edge, with 2 Points, Pen, Pencil and Needle Points . . . . .	each	\$ 10 00
163.	do. do. with attachment on wheels, to stand by itself. . . . .	"	12 50
	Morocco Case for No. 162 . . . . .	"	1 00
	" " " No. 163 . . . . .	"	1 50



No. 166. 167. 168. 169. 170. 171.

165.	Drawing Pen with Ebony Handle, 5 inch . . . . .	each	\$ 1 20
166.	" " with joint, Ivory Handle, 4 inch . . . . .	"	1 50
167.	" " " " and pin, Ivory Handle, 4 1/2 inch . . . . .	"	1 75
168.	" " " " " " " " " 5 1/2 " . . . . .	"	2 00
169.	" " " " " " " " " 6 1/4 " . . . . .	"	2 20
170.	Border Pen for broad lines . . . . .	6 1/2 " . . . . .	" 3 50
171.	Curve Pen . . . . .	4 1/2 " . . . . .	" 1 75





No. 172.

173.

No. 174.

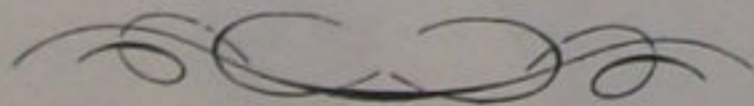
175.

176.

177.

178.

172.	Rail Road Pen with Ivory Handle, 5½ inch	. . . . .	each	\$ 4 00
173.	" " " K & E's improved, 5½ "	. . . . .	"	4 25
174.	Dotting Pen with 6 Wheels	6 "	. . . . .	" 4 00
175.	" " " 6 " improved, 6 "	. . . . .	"	5 00
176.	Opisometer, for measuring curved lines	. . . . .	"	3 00
177.	Tracer	. . . . .	"	1 50
178.	Pricker	. . . . .	"	2 00
	Needle Points, shouldered from	. . . . .	\$	15 to 25



CASES OF SWISS INSTRUMENTS.

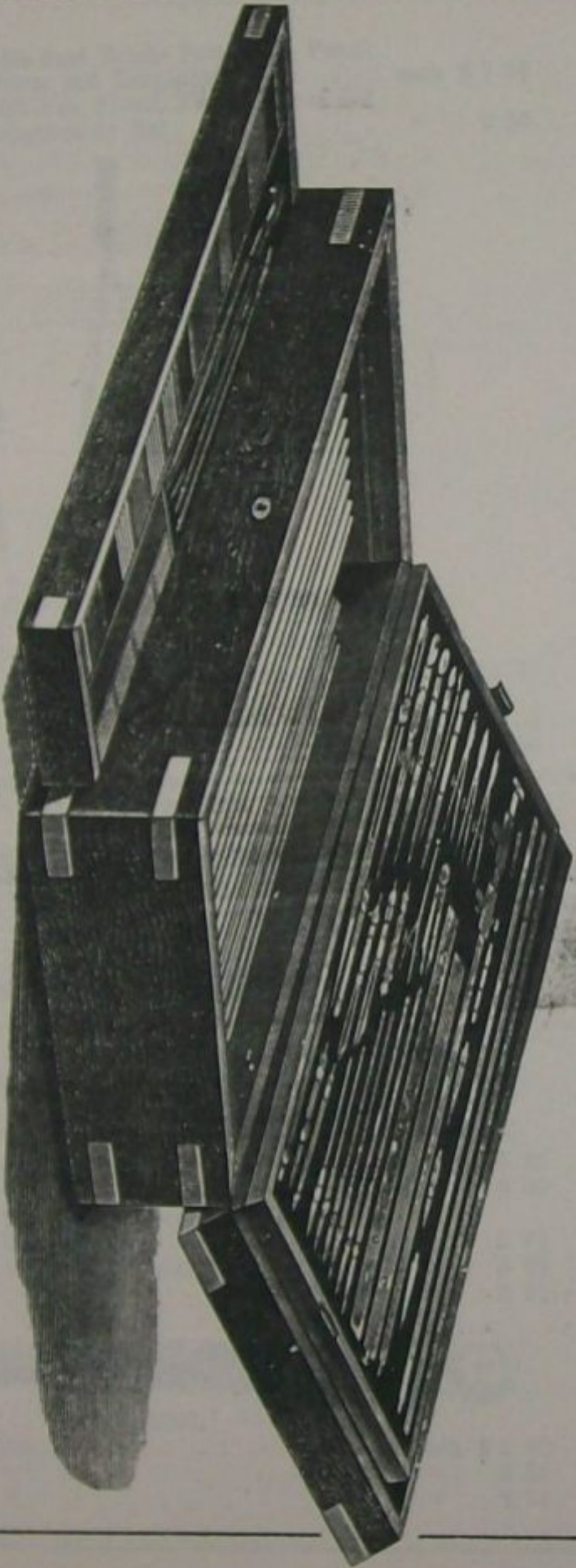


No. 181.



No. 183.

180.	Morocco Case, contg. No. 126, 128, 166 . . . . .	each	\$ 10 50
181.	Polished Rosewood Case, with lock and tray, contg. No. 129, 130, 131, 135, 166, 168 . . . . .	"	28 25
182.	do. " No. 128, 131, 134, 166, 168 . . . . .	"	24 50
183.	do. " No. 127, 133, 135, 166, 168 . . . . .	"	29 00
184.	do. " No. 131, 135, 151, 154, 155, 166, 169 . . . . .	"	31 50
185.	do. " No. 129, 130, 133, 137, 151, 154, 155, 166, 169 . . . . .	"	43 50
186.	do. " No. 128, 131, 133, 137, 151, 162, 166, 169 . . . . .	"	48 50
187.	do. " No. 129, 130, 131, 133, 135, 151, 154, 155, 159, 166, 168, 169, 172 . . . . .	"	65 00



No. 189.

188. Fine polished Rosewood or Black Walnut Case with Lock and Tray,

contg: No. 129, 130, 131, 133, 137, 139, 141, 151, 152, 153, 161, 2 of 166, 2 of 167, 2 of 168, 403, 708 each \$ 100 00

189. Fine polished Rosewood or Black Walnut Case with German Silver Straps and Corners, Lock, Tray and Drawer,  
contg.: The same instruments as No. 188; in central portion 6 Hard Rubber Chain and 6 Offset Scales or

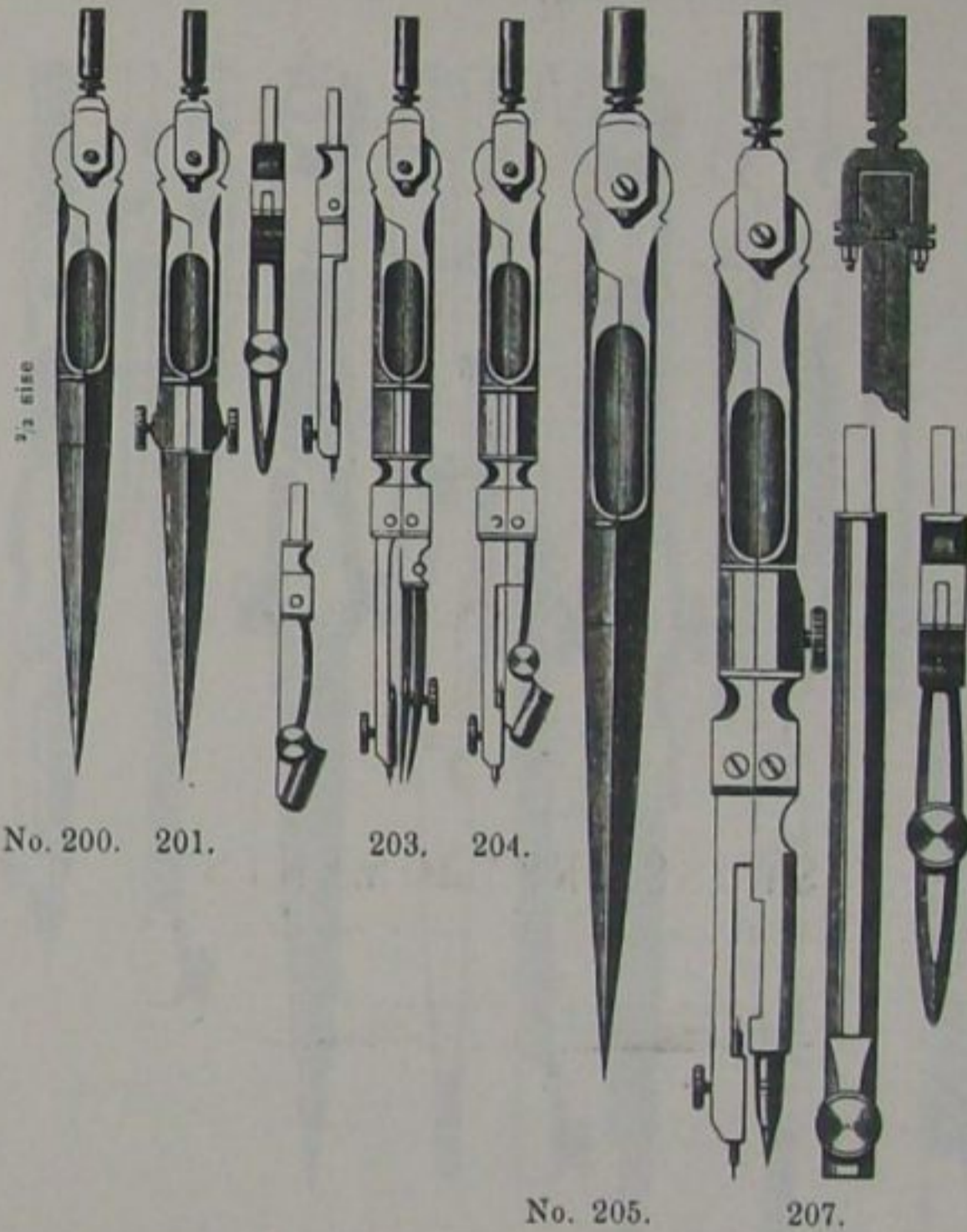
8 Architects Scales, Ivory Rectangular Protractor, German Silver Protractor, 2 doz German Silver  
Tacks, 2 Horncentres with German Silver edge; Drawer containing: 12 Water Colors, India Ink,  
12 assorted Brushes, Ink Slab, Color Saucers, 2 Rubber Triangles, 2 Rubber Curves . . . . . each \$ 150 00

Other Cases fitted up to order, with such instruments as may be selected from our Catalogue.



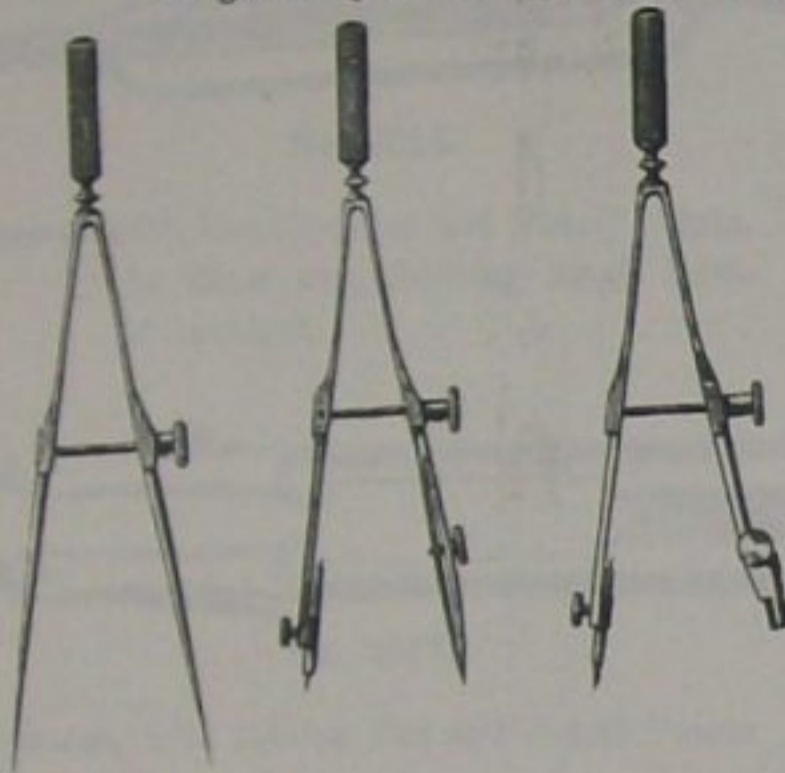
# SWISS INSTRUMENTS

of best German Silver and English Steel with Patent  
Pivot Joint.



199.	Hairspring Dividers, 3½ inch . . . . .	each \$ 3 00
200.	Dividers, 3½ inch . . . . .	" 2 00
201.	Compasses, 3½ inch, with Pen, Pencil and Needle Points	" 7 50
202.	do. 3½ " with fixed Needle Point, Pen and Pencil Points . . . . .	" 6 00
203.	do. 3½ " with fixed Needle and Pen Points (Bow Pen) . . . . .	" 4 75
204.	do. 3½ " with fixed Needle and Pencil Points (Bow Pencil) . . . . .	" 4 25
205.	Dividers, 5 inch . . . . .	" 2 75
206.	Hairspring Dividers, 5 inch . . . . .	" 3 50

- 207. Compasses, 5 inch, with fixed Needle Point, Pen, Pencil Points and Lengthening Bar . . . each \$ 7 50
- 208. do. 6 inch, with Pen, Pencil, Needle Points and Lengthening Bar . . . . . " 9 50

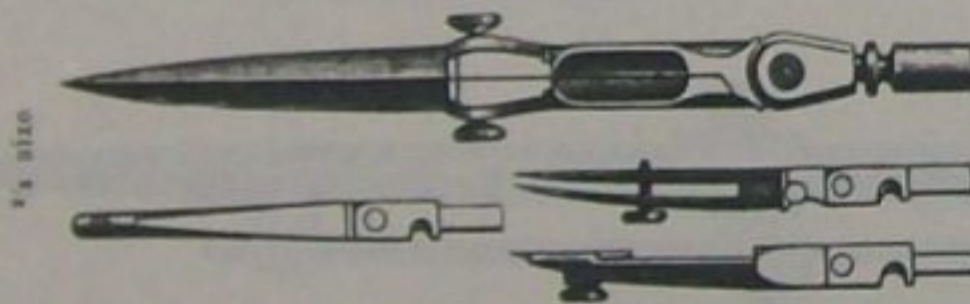


- No. 210. 211. 212.
- 210. Steelspring Dividers with German Silver Handle, 3 1/4 inch \$ 1 70
- 211. " Bowpen " " " " " " 2 50
- 212. " Bowpencil " " " " " 3 1/2 " 2 50

To complete a set of the above Instruments we recommend our regular Swiss from No. 125-178 as they match them in style and finish.

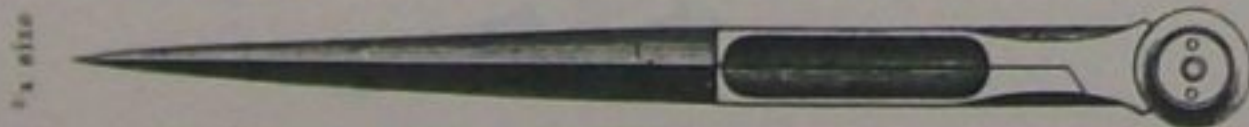
## SWISS INSTRUMENTS

of German Silver and English Steel, made by J. Kern in Aarau.



No. 2002.

- 2001. Dividers, 3 1/4 inch, with 2 Needlepoints . . . . . each \$ 3 25
- 2002. Compasses, 3 1/4 inch, with Pen, Pencil and Needle Points " 6 00
- 2003. do. 3 1/4 " with fixed Needle Point, Pen and Pencil-Points . . . . . " 5 25
- 2004. do. 3 1/4 " with fixed Needle and Pen Points " 3 60
- 2005. do. 3 1/4 " " " " " Pencil Points " 3 60



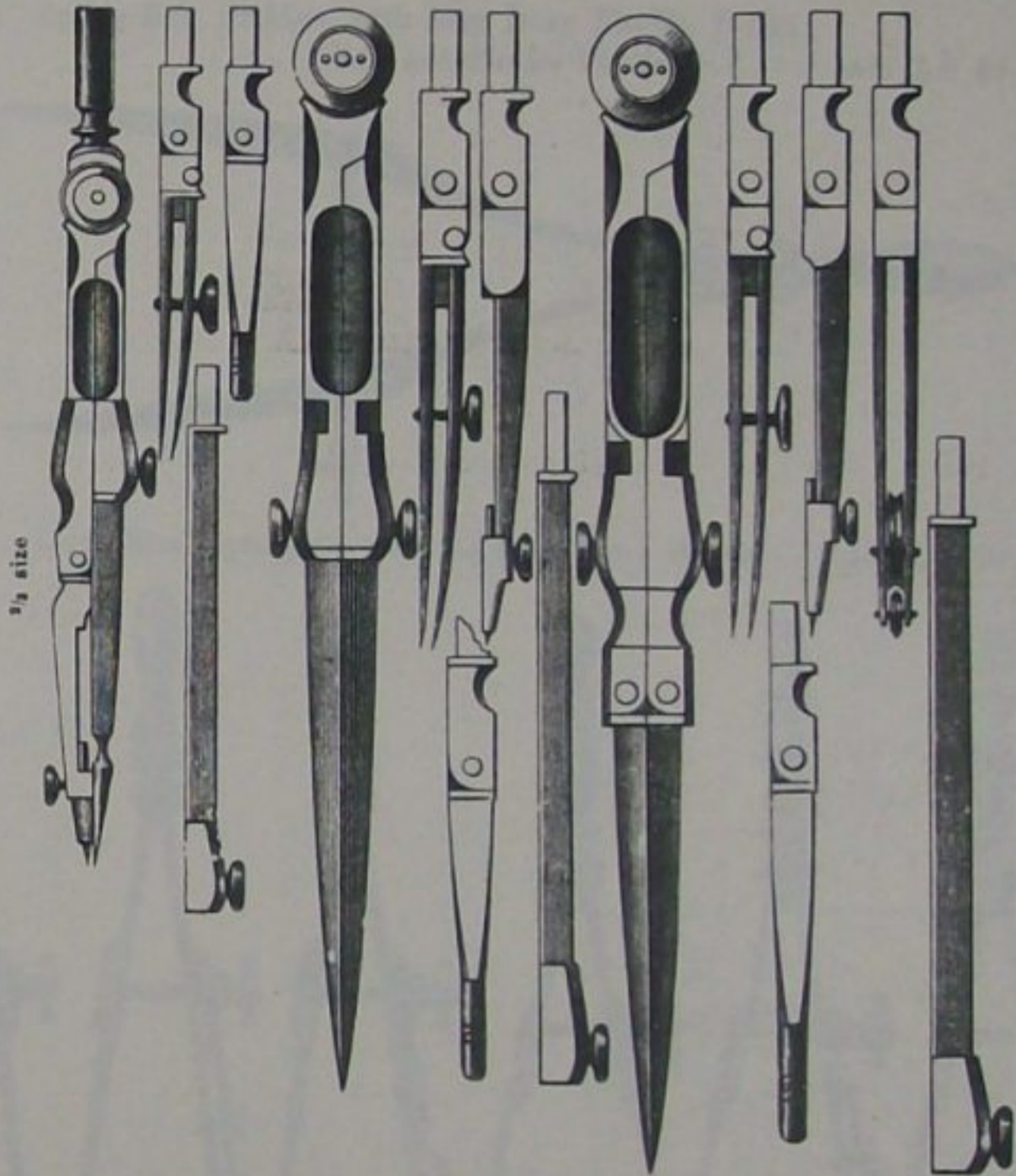
No. 2007.

- 2006. Plain Dividers, 4 inch . . . . . each \$ 1 90
- 2007. " do. 5 " . . . . . " 2 25
- 2008. " do. 6 " . . . . . " 2 70



No 2009.

2009-1.	Hairspring Dividers, 4 inch . . . . .	each	\$ 2 65
2009.	" " 5 " . . . . .	"	3 00

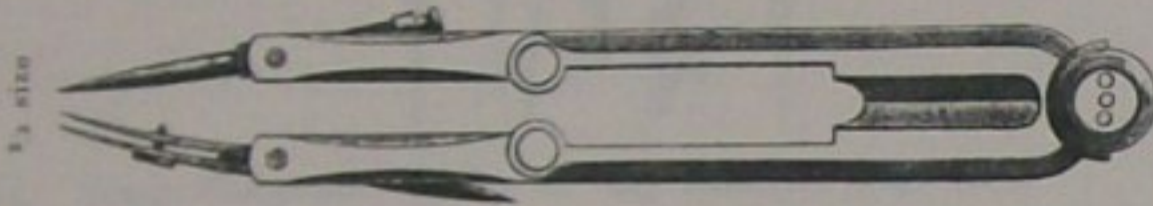


	No. 2011.	2013.	2014.	
2011	Compasses, 4 1/4 inch, with handle, fixed Needle Point, Steel, Pen, Pencil Points and Lengthening Bar . . . . .			each \$ 7 50
2012.	do. 4 1/4 inch, with Pen, Pencil, Needle Points and Lengthening Bar . . . . .			" 7 60
2013.	do. 6 inch	do. do. do.		" 8 25
2014.	do. 6 1/2 inch, with Joints in each leg, Pen, Pencil, Needle Points, Lengthening Bar and Dotting Pen . . . . .			" 11 00
2015.	do. 6 1/2 inch, with Joints in each leg, Pen, Pencil, Needle Points and Lengthening Bar . . . . .			" 10 00



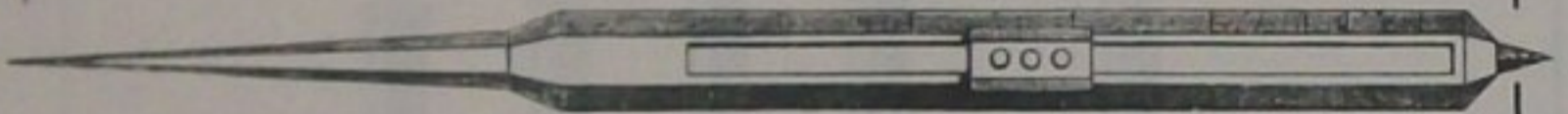
No. 2016.

2016. Pillar Compasses with Handles, Pen and Pencil Points, to draw out, forming small Bows if required . . . . . each \$ 10 00



No. 2017.

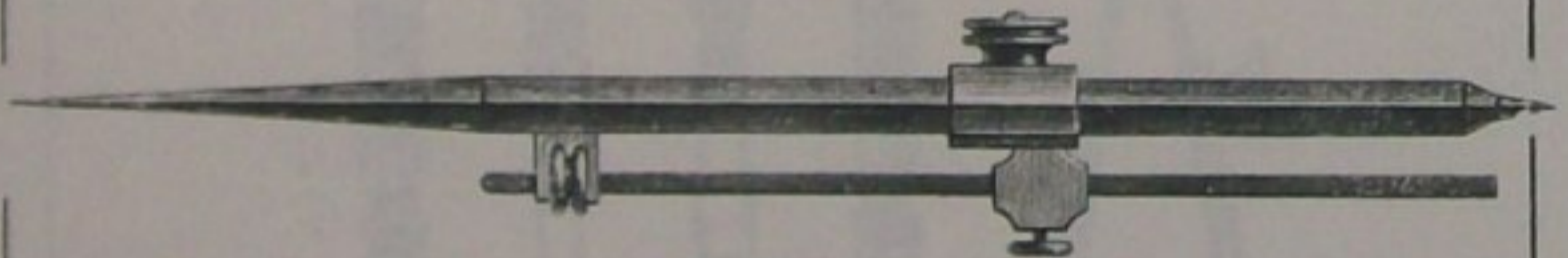
2017. Pocket Compasses, with folding Pen and Pencil Points each \$ 9 00



No. 2021.

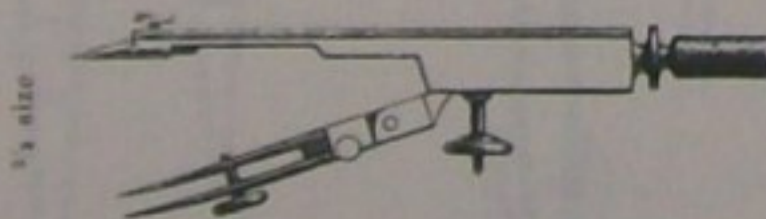
2020.	Proportional Dividers, 7 inch, for lines and circles . .	each \$ 10 00
2021.	do. do. 9 1/4 " do. do. . . . .	" 12 25
2022.	do. do. 8 1/4 " do. do. . . . .	" 12 75

with Rackmovement



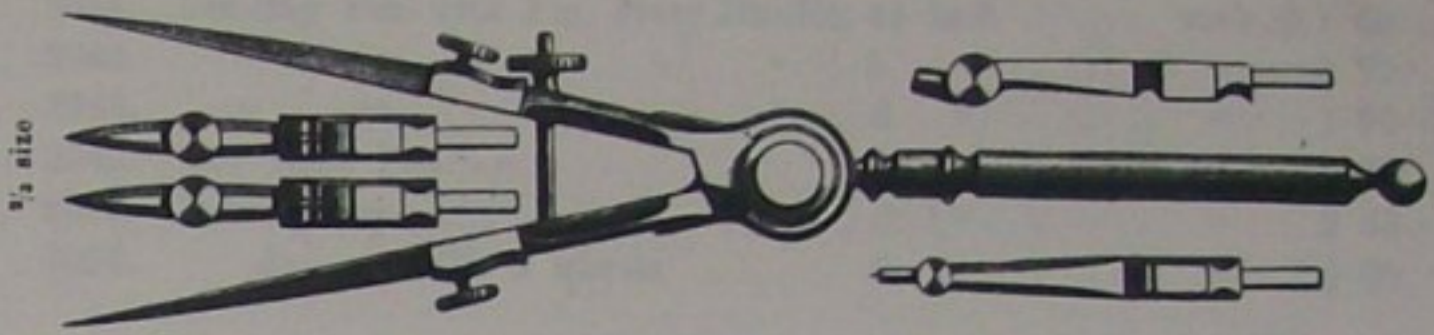
No. 2023.

2023. Proportional Dividers, 9 1/2 inch, with micrometer adjustment each \$ 14 75

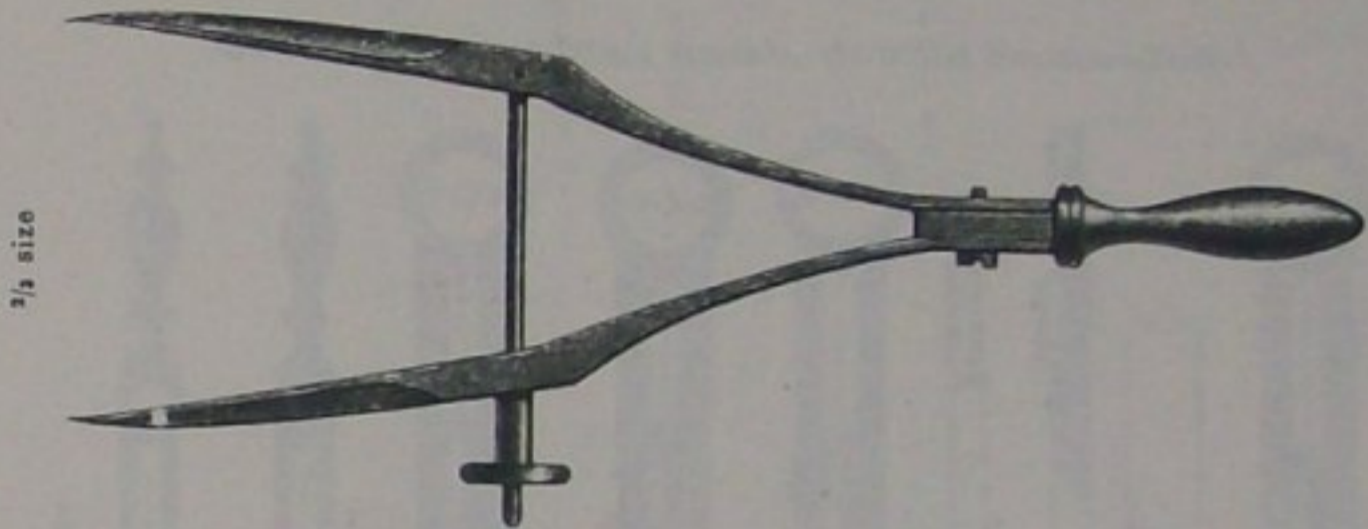


No. 2024.

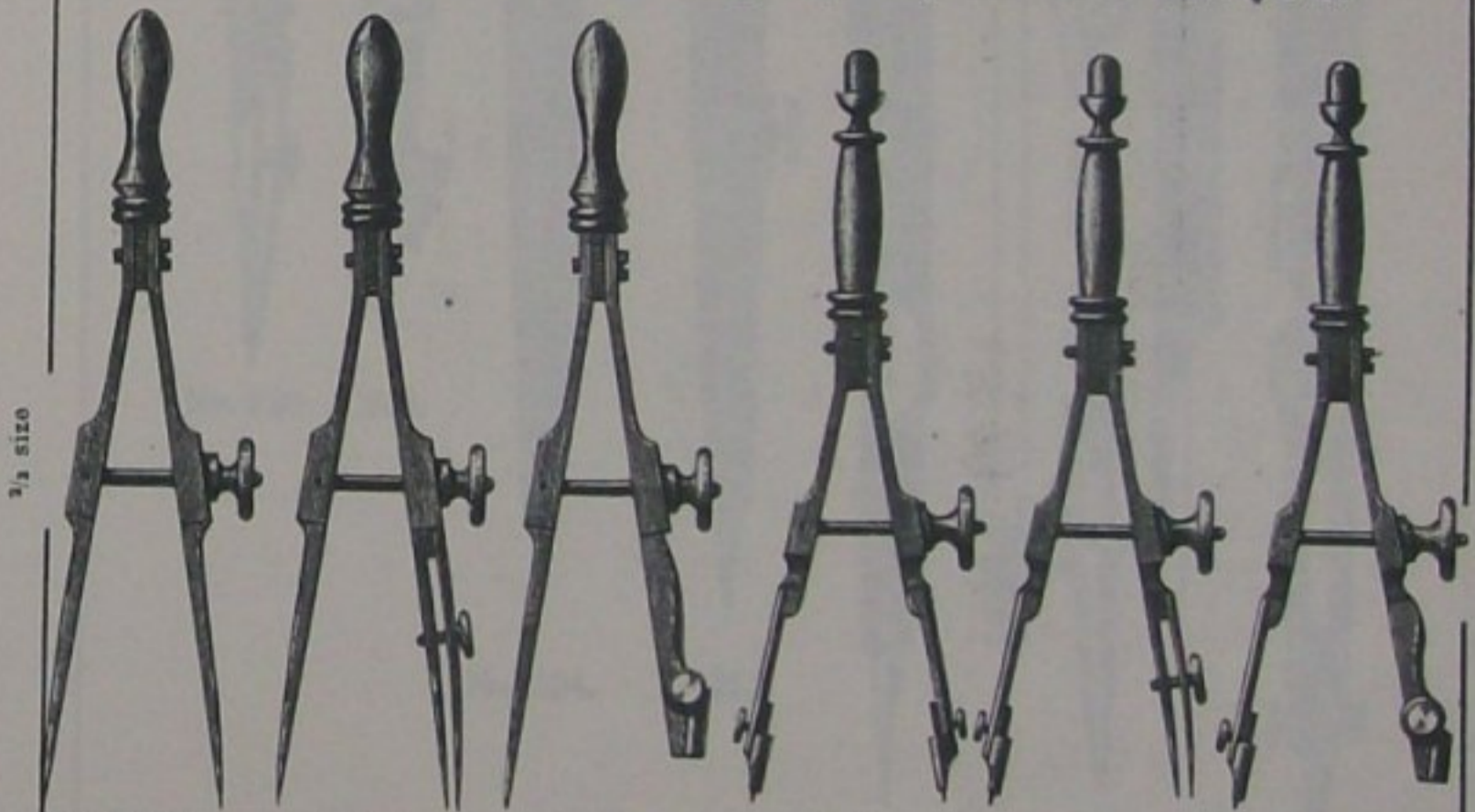
2024.	Bow Pen with Spring and adjusting screw . . . . .	each \$ 2 65
2025.	do. do. and Pencil Point . . . . .	" 3 60



2026. Spring Bow Dividers with long Ivory Handle, 2 Pen,  
Pencil and Needle Points . . . each \$ 8 50

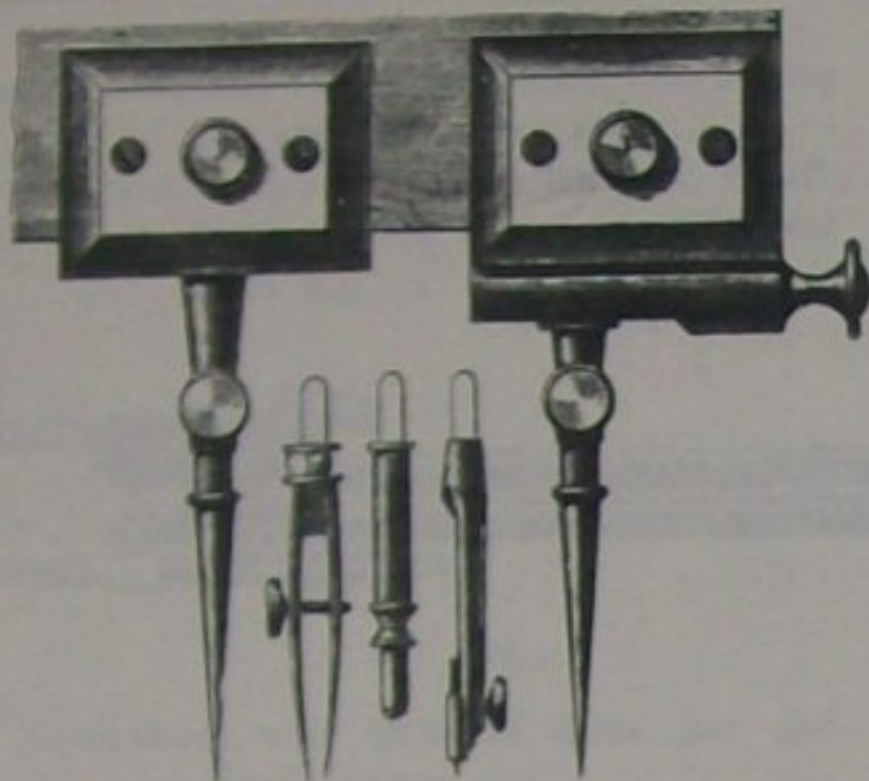


2027. Large Steel Spring Dividers, 4 1/2 inch, Ivory Handle . each \$ 3 20



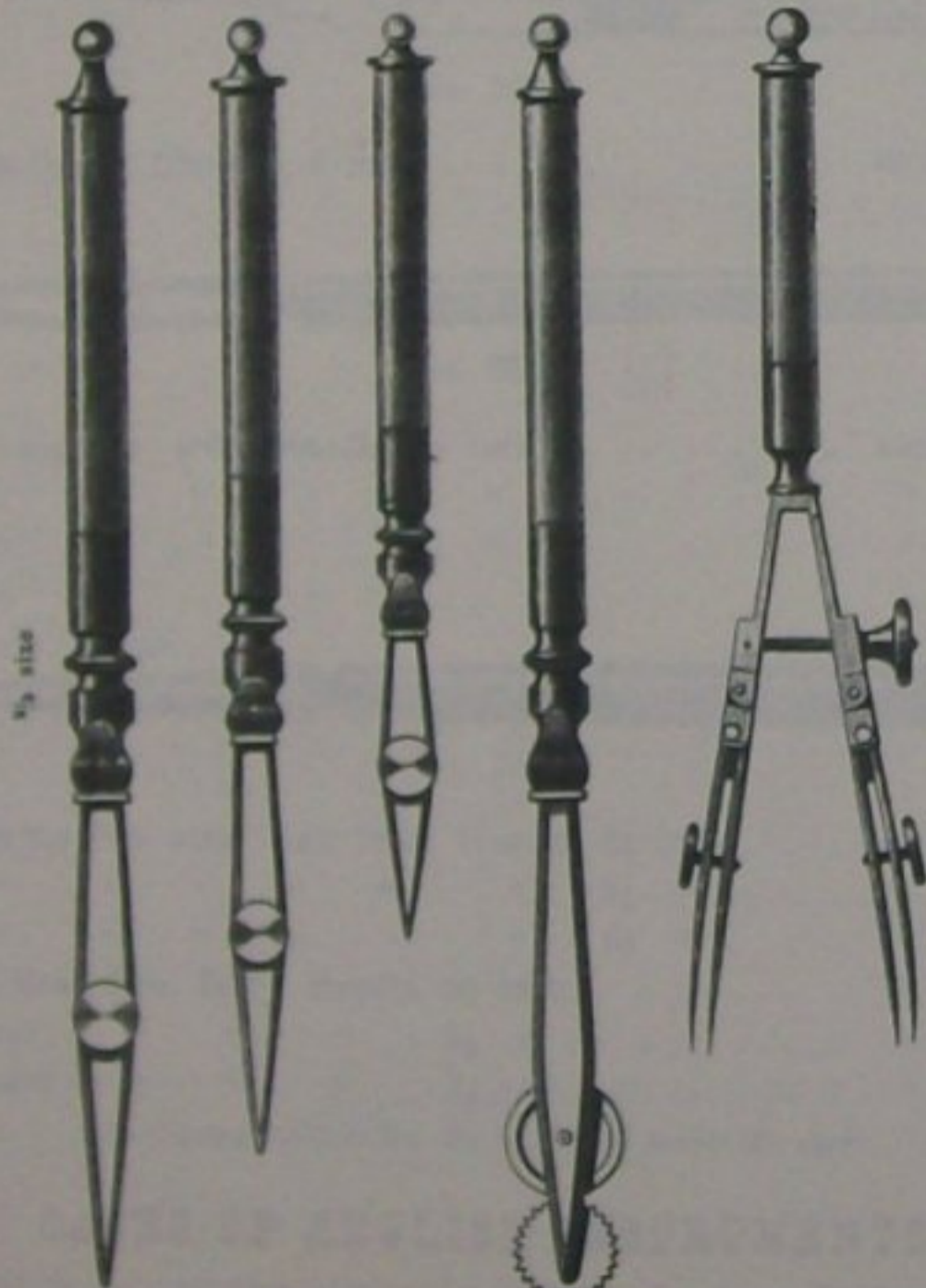
No. 2028.                      2029.                      2030.                      2034.                      2035.                      2036.

2028.	Steel Spring Dividers, Ivory Handle	each	\$ 1 70
2029.	" " Bow Pen	"	2 25
2030.	" " Bow Pencil	"	2 25
2034.	" " Dividers with Needle Points	"	2 90
2035.	" " Bow Pen	"	3 00
2036.	" " Bow Pencil	"	3 00



No. 2041.  $\frac{1}{2}$  size

2041. Beam Compasses to fit on any Straight Edge with  
 Pen, Pencil and Needle Points . . each \$ 8 00  
 Morocco Case for No. 2041 . . . . . " 1 00

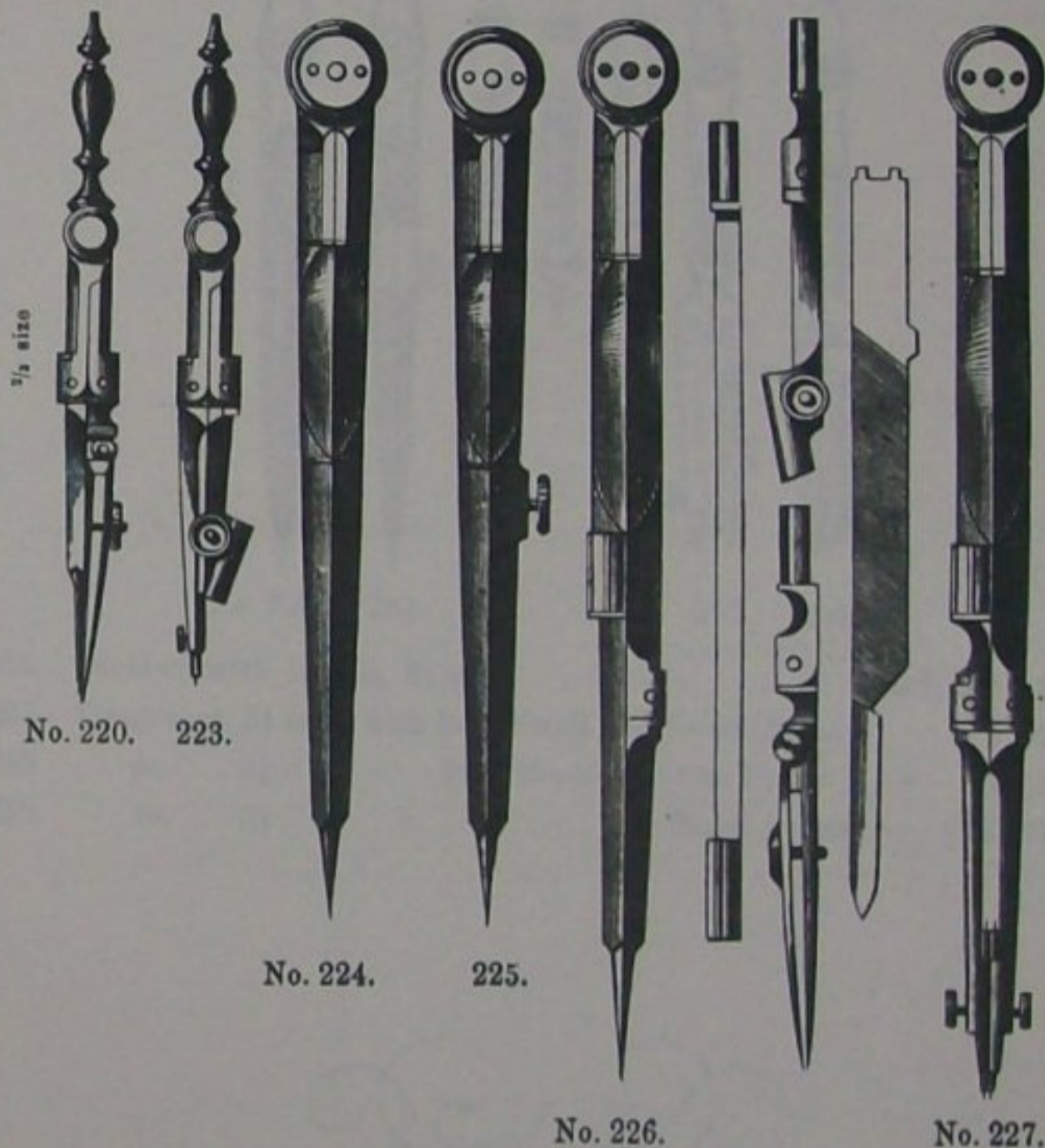


No. 2046. 2045. 2044. 2051. 2049.

2044.	Drawing Pen with Pin, Ivory Handle, 4½ inch . . .	each	\$ 1 60
2045.	“ do. “ “ “ “ 5 “ . . .	“	1 70
2046.	“ do. “ “ “ “ 6 “ . . .	“	1 90
2049.	Rail Road Pen . . . . .	“	3 80
2051.	Dotting Pen . . . . .	“	2 65
2052.	do. with 6 wheels . . . . .	“	4 00

## ENGLISH INSTRUMENTS.

German Silver, fine finish, double Sector-Joint.



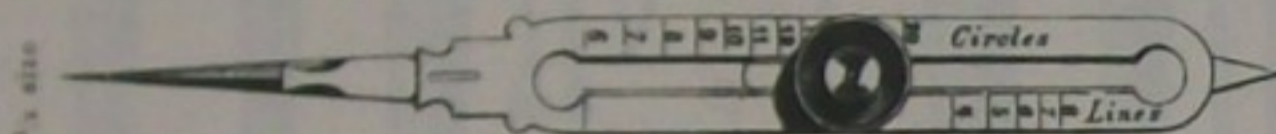
220.	Bow Pen, 3½ inch . . . . .	each	\$ 8 50
221.	Bow Pencil, 3½ inch . . . . .	“	3 50
222.	Bow Pen with Needle Point, 3½ inch . . . . .	“	4 00
223.	Bow Pencil with “ “ 3½ “ . . . . .	“	4 00
224.	Dividers, 5 inch . . . . .	“	2 50
225.	Hairspring Dividers, 5 inch . . . . .	“	3 50

226. Compasses, 6 inch, with Pen, Pencil Points, Lengthening Bar and Knife Key . . . . . each \$ 11 00
227. do. 6 inch, with joint in each leg, Pen, Pencil, Needle Points, Lengthening Bar and Knife Key . . . . . " 16 00



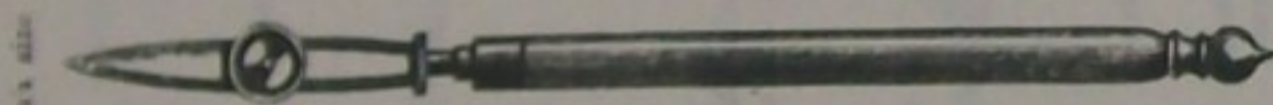
No. 228.

228. Tubular Compasses, with improved Slide Bar and Needle Points . . . . . each \$ 18 00



No. 229.

229. Proportional Dividers, 6 inch . . . . . each \$ 7 50



No. 232.

231. Drawing Pen, Ivory Handle, 4½ inch . . . . . each \$ 1 25
232. " " " " 5½ " . . . . . " 1 35
233. " " " " 6½ " . . . . . " 1 50



No. 235.

234. Drawing Pen with joint, Ivory Handle, 4½ inch . . . . . each \$ 1 50
235. " " " " " 5½ " . . . . . " 1 75
236. " " " " " 6½ " . . . . . " 2 00
237. Rail Road Pen, Ivory Handle, 5½ inch . . . . . " 4 50
238. Tracer " " " 5½ " . . . . . " 1 00
239. Pricker " " " 5½ " . . . . . " 1 50

Steel-spring Dividers No. 150 to No. 155 match the above.

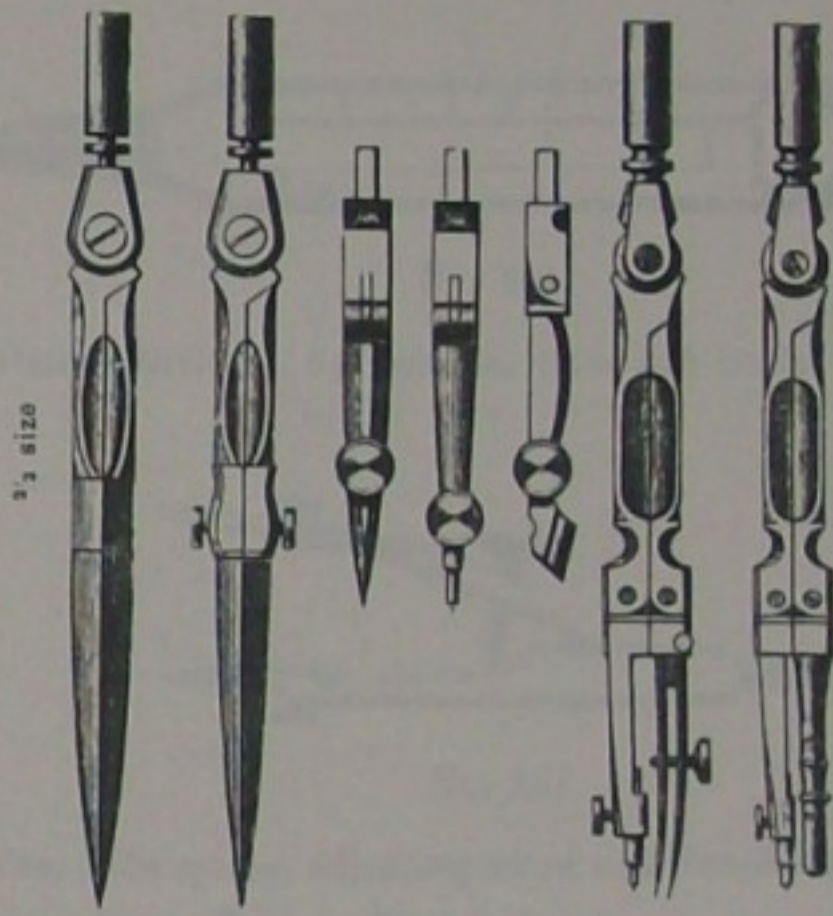
### CASES OF ENGLISH INSTRUMENTS

containing any of the above Instruments, also Scales, Colors Brushes etc., made to order.



## GERMAN INSTRUMENTS

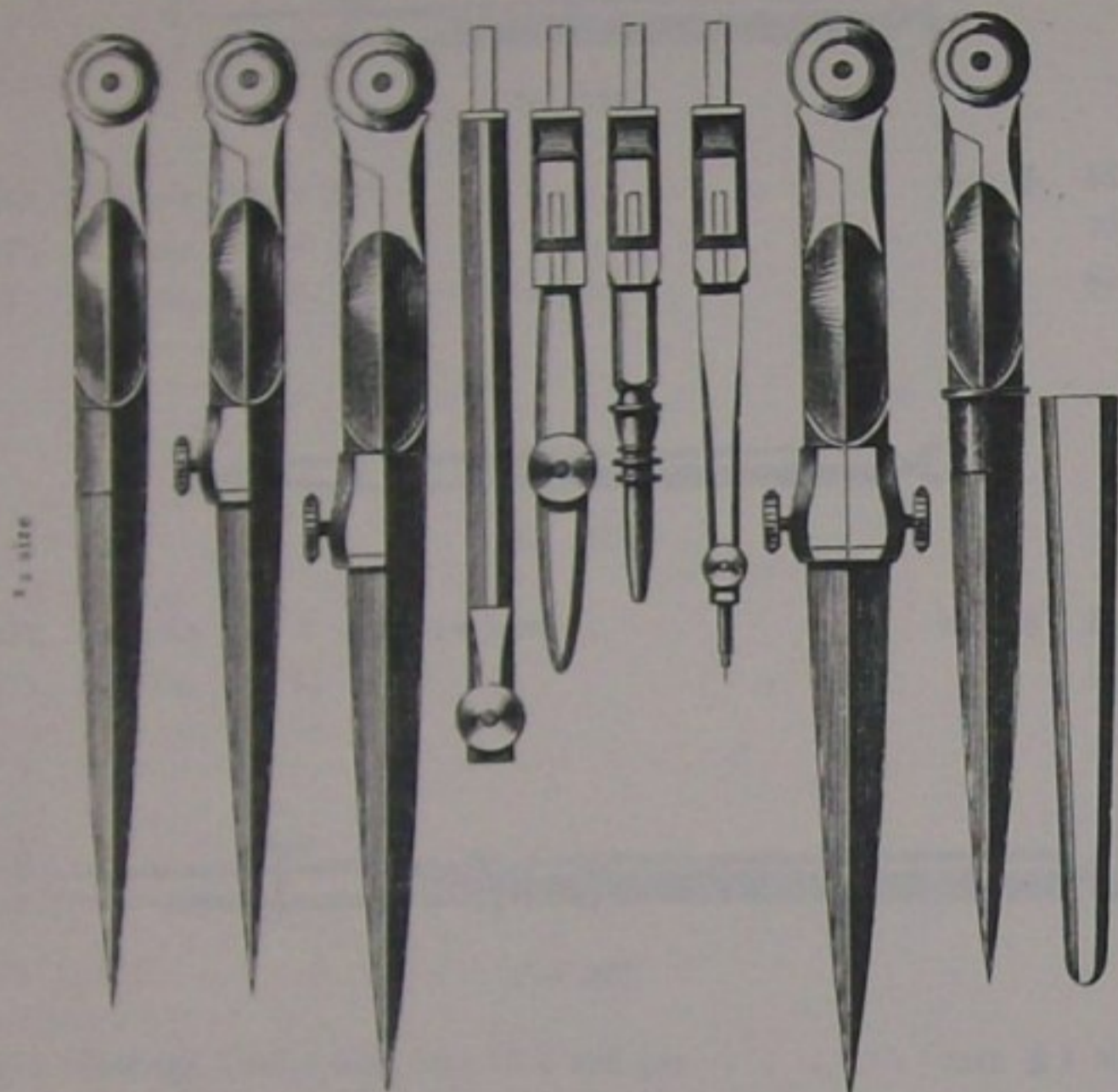
of German Silver, best Steel Points, highly finished.



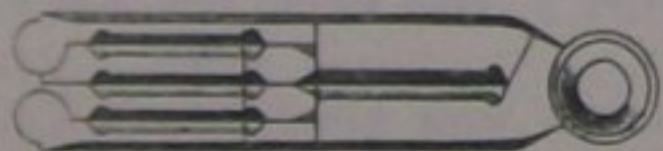
No. 250. 251. 252. 253.

250.	Dividers with Handle, 3/4 inch . . . . .	each \$ 1 05
251.	Compasses, 3/4 inch, with Pen, Pencil and Needle Points	" 3 00
252.	do. 3/4 " " fixed Needle and Pen Points .	" 2 20
253.	do. 3/4 " " " " Pencil Points	" 2 20



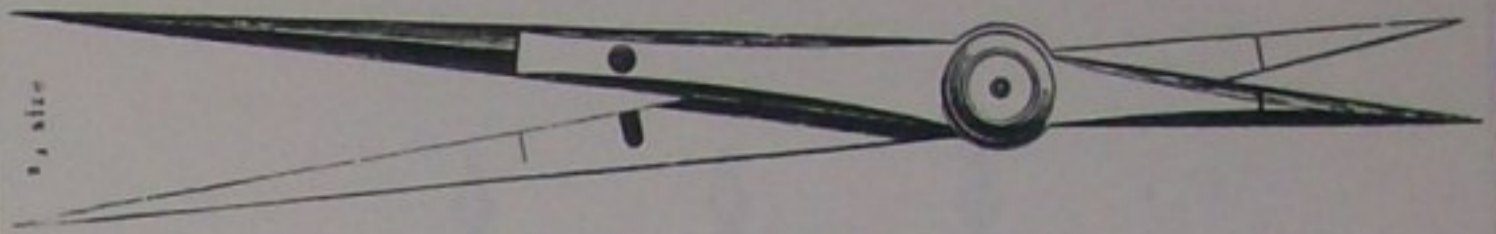


No. 255.	257.	258.	259.	260.
254. Dividers, 4 inch . . . . .				each \$ 90
255. " 5 " . . . . .				" 1 00
256. " 6 " . . . . .				" 1 10
257. Hairspring Dividers, 5 inch . . . . .				" 1 90
258. Compasses, 5 1/2 inch, with Pen, Pencil Points and Lengthening Bar . . . . .				" 3 00
259. do. 5 1/2 " with Pen, Pencil, Needle Points and Lengthening Bar . . . . .				" 4 00
260. Pocket Dividers, with sheath . . . . .				" 2 20



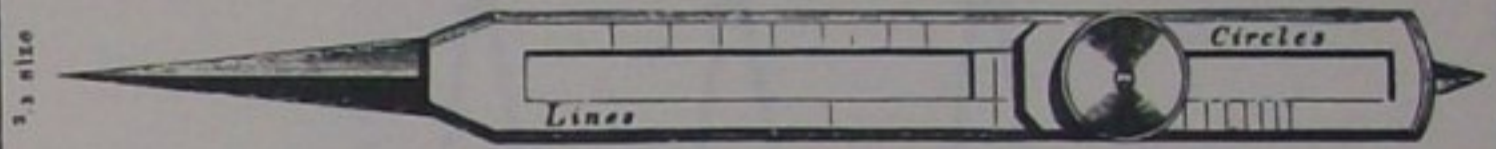
No. 261.

261. Pocket Compasses with folding Points . . . . .	each \$ 7 00
262. Triangular Compasses, 5 inch, for taking off three points . . . . .	" 4 00



No. 263.

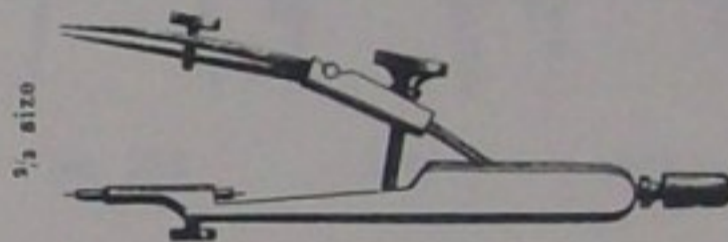
263. Whole and Half Dividers, 6½ inch . . . . . each \$ 2 80



No. 264.

264. Proportional Dividers, 6½ inch, for lines and circles . each \$ 8 00

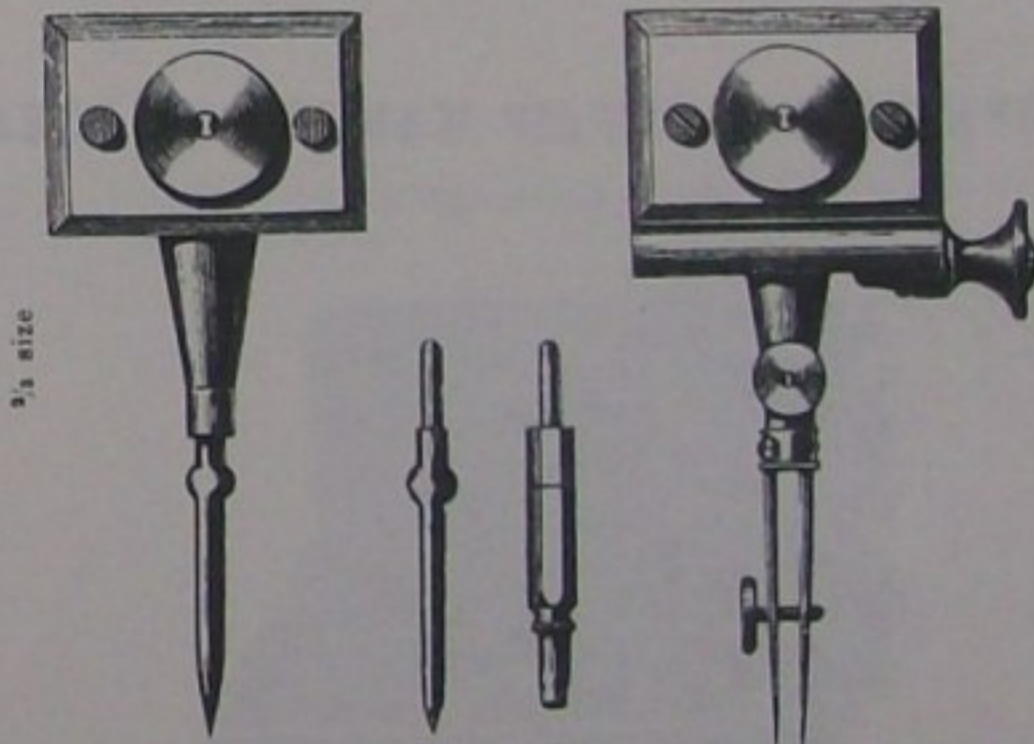
265. do. 8½ " " " " " " " 9 00



No. 267.

266. Bow Pen, with spring, adjusting screw and Pencil Point each \$ 2 85

267. do. " " " " " " " 2 00



No. 268.

268. Beam Compasses to fit on any straight edge, with Pen and Pencil Points . . . . . each \$ 7 00

Morocco Case for No. 268 . . . . . " 1 00



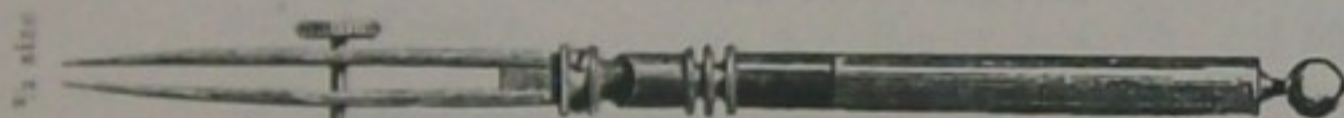
No. 269.

269.	Drawing Pen, 4 inch . . . . .	each \$	55
270.	do. 5 " . . . . .	"	70
271.	do. 5 " common joint . . . . .	"	80



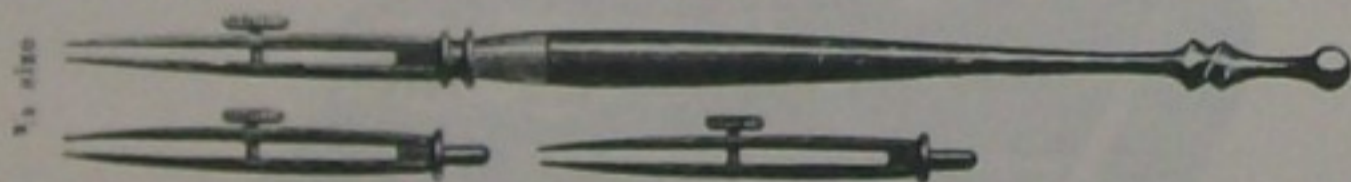
No. 272.

272.	Drawing Pen, 4 inch, fine joint . . . . .	each \$	85
273.	do. 5 1/2 " " " . . . . .	"	1 00



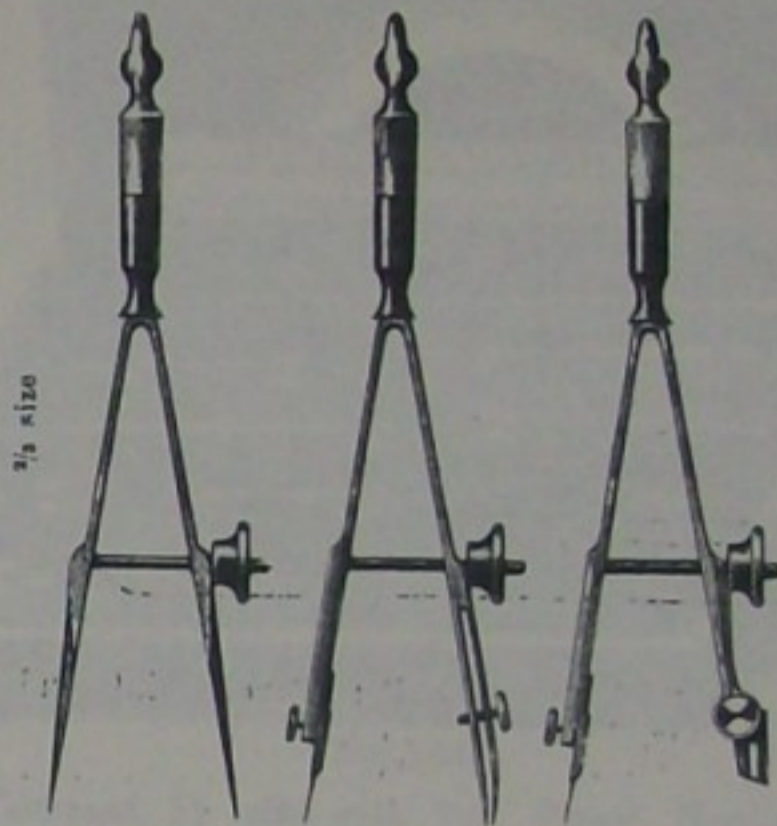
No. 275.

274.	Drawing Pen, 4 inch, fine joint and pin . . . . .	each \$	1 00
275.	do. 5 1/2 " " " " " . . . . .	"	1 25
276.	Hatching Pen, 5 inch, with 3 Pairs of Blades . . . . .	"	1 75



No. 279.

277.	Hatching Pen, 6 inch, with pushing screw . . . . .	each \$	1 50
278.	do. 5 inch, with pushing screw, 2 Pairs of Blades . . . . .	"	1 75
279.	do. 5 inch, with pushing screw, 3 Pairs of Blades . . . . .	"	2 25
280.	Drawing Pen, 5 inch, with German Silver Blades, for red ink . . . . .	"	80
281.	Rail Road Pen, 5 1/2 inch . . . . .	"	2 75



No. 282.

283.

284.

282.	Steel Spring Dividers . . . . .	each	\$ 1 25
283.	Steel Spring Bow Pen with Needle Point . . . . .	"	1 70
284.	Steel Spring Bow Pencil with Needle Point . . . . .	"	1 70
	Morocco Case for No. 282, 283, 284 . . . . .	"	75

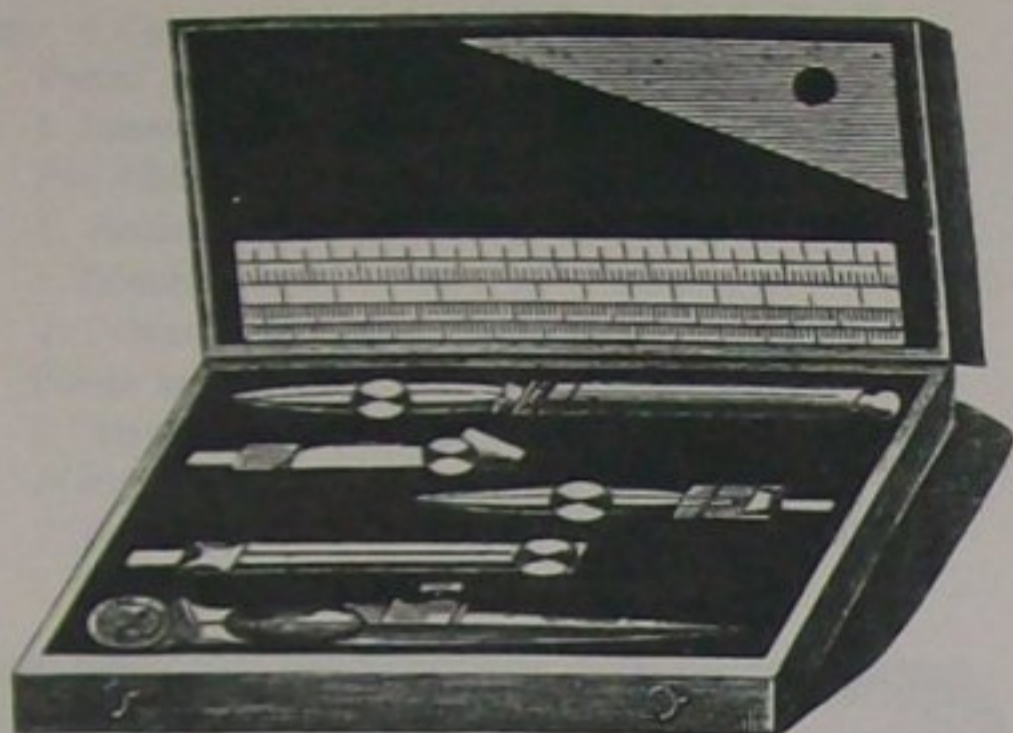
**CASES OF GERMAN SILVER INSTRUMENTS.**

In Morocco Case.



No. 300.

300.	contg.: 1 Compass, 3 1/2 inch, with Pen, Pencil and Needle Points, 1 Drawing Pen . . . . .	each	\$ 3 50
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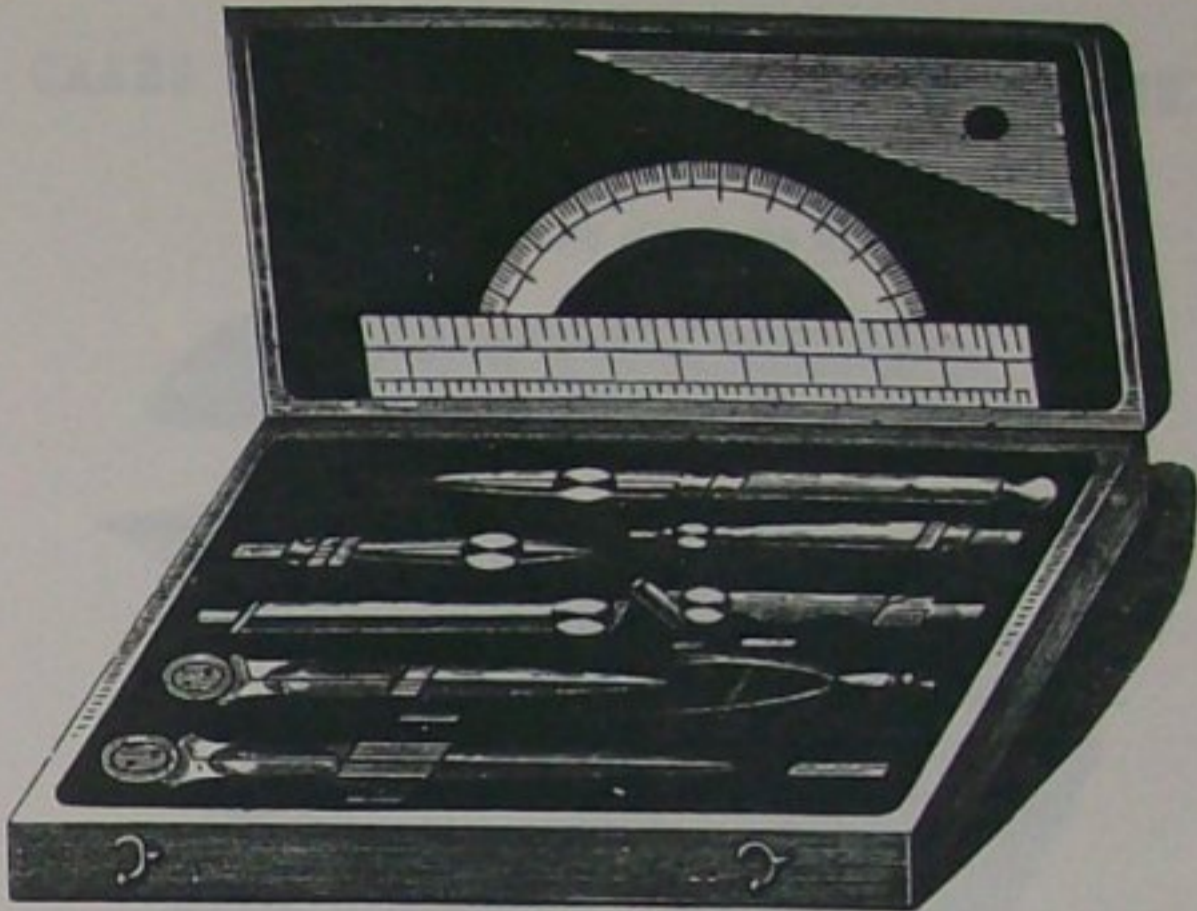
No. 301.

- |                             |  |              |
|-----------------------------|--|--------------|
| 301. contg.:                | 1 Compass, 5 $\frac{1}{4}$ inch, with Pen, Pencil Points and Lengthg. Bar, 1 Drawing Pen,<br>1 boxwood Scale, 1 Triangle . . . . .         | each \$ 3 50 |
| 301 $\frac{1}{2}$ . contg.: | 1 Compass, 5 $\frac{1}{4}$ inch, with Pen and Pencil Points<br>1 Dividers, 5 inch, 1 Drawing Pen, 1 boxwood<br>Scale, 1 Triangle . . . . . | " 4 00       |



No. 302.

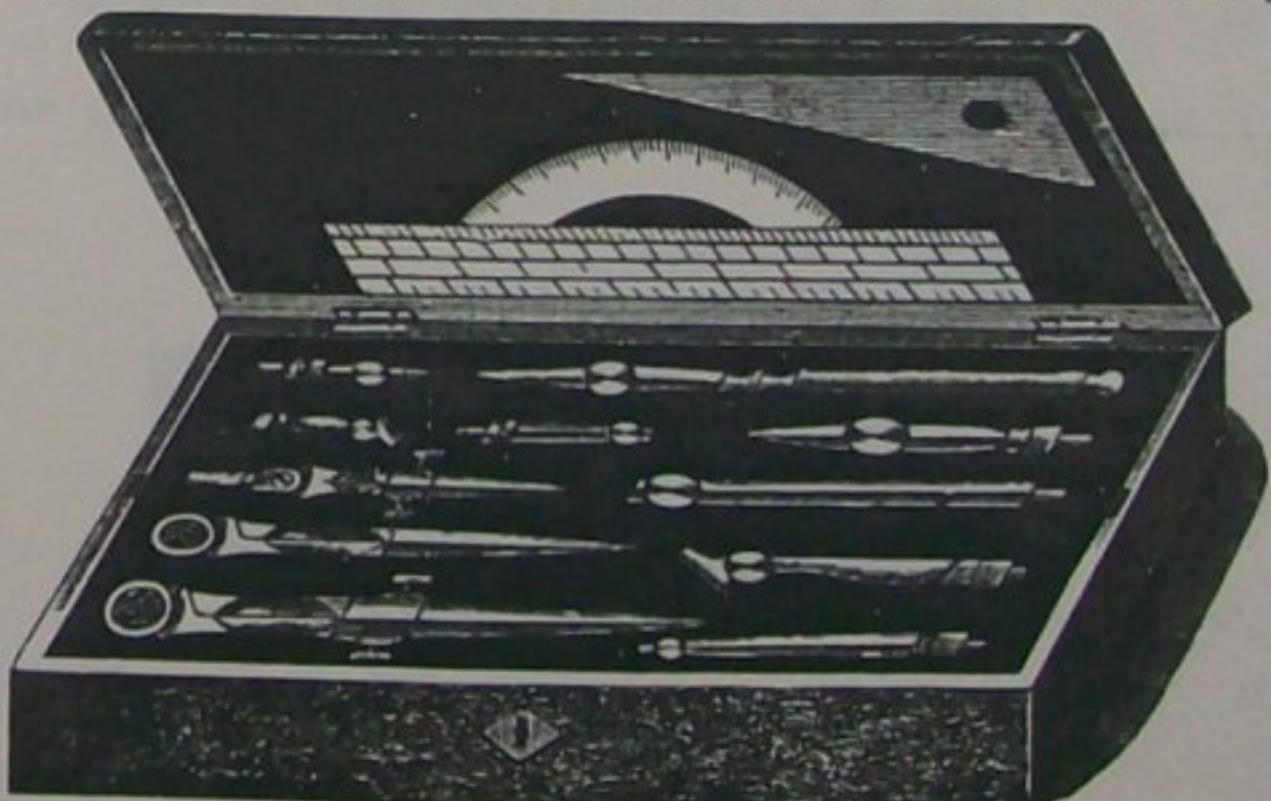
- |                             |   |              |
|-----------------------------|---|--------------|
| 302. contg.:                | 1 Compass, 5 $\frac{1}{4}$ inch, with Pen, Pencil, Needle<br>Points and Lengthg. Bar, 1 Drawing Pen,<br>1 boxwood Scale, 1 Triangle . . . . .       | each \$ 5 00 |
| 302 $\frac{1}{2}$ . contg.: | 1 Compass, 5 $\frac{1}{4}$ inch, with Pen, Pencil and Needle<br>Points, 1 Dividers, 5 inch,<br>1 Drawing Pen, 1 boxwood Scale, 1 Triangle . . . . . | " 5 50       |
| 303. "                      | The same as No. 302 and 1 Dividers, 5 inch . . . . .  | " 6 00       |



No. 304.

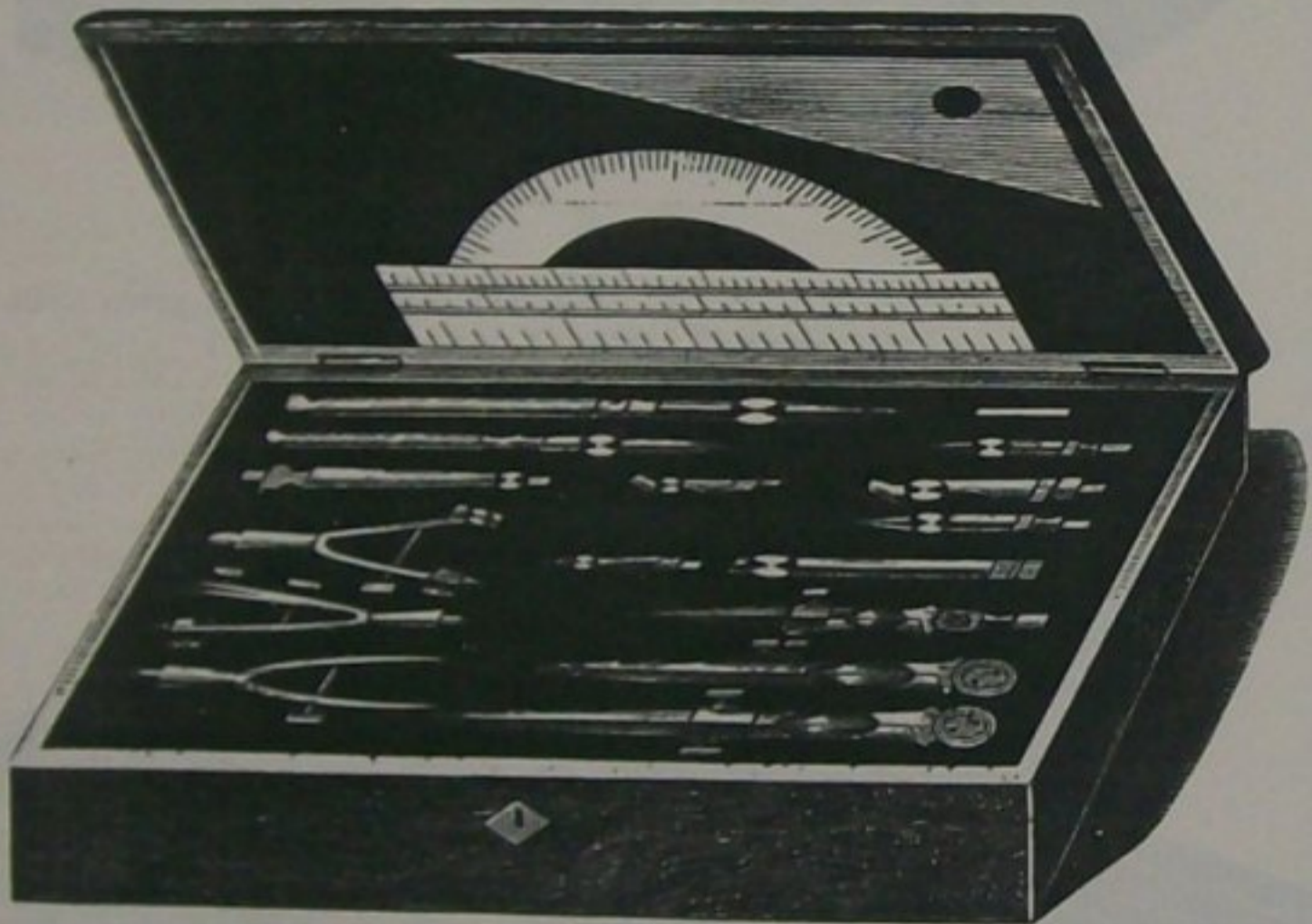
304. contg.: 1 Compass, 5½ inch, with Pen, Pencil, Needle Points and Lengthg. Bar, 1 Dividers, 5 inch, 1 Drawing Pen, 1 Steel Spring Bow Pen, with Needle Point 283, 1 Semicircular Protractor, 1 boxwood Scale, 1 Triangle . . . . . each \$ 8 00
- 305 contg.: 1 Compass, 5½ inch, with Pen, Pencil, Needle Points and Lengthg. Bar, 1 Hairspring Dividers 5 inch, 1 Compass, 3½ inch, with Pen, Pencil and Needle Points, 1 Drawing Pen with Pin, 6 inch, 1 Semicircular Protractor, 1 Boxwood Scale, 1 Triangle . . . . . " 11 00

In polished Black Walnut Case with Lock and Tray.



No. 309.

308. contg.: 1 Compass, 5½ inch, with Pen, Pencil, Needle Points and Lengthg. Bar, 1 Dividers, 5 inch, 1 Drawing Pen with Pin, 1 Steel Spring Bow Pen with Needle Point 283, 1 Semicircular Protractor, 1 boxwood Scale, 1 Triangle . . . . . each \$ 10 00
309. " 1 Compass, 5½ inch, with Pen, Pencil, Needle Points and Lengthg. Bar, 1 Dividers, 5 inch, 1 Compass, 3½ inch, with Pen, Pencil and Needle Points, 1 Drawing Pen, 6 inch, with Pin, 1 Semicircular Protractor, 1 boxwood Scale, 1 Triangle . . . . . " 11 50



No. 311.

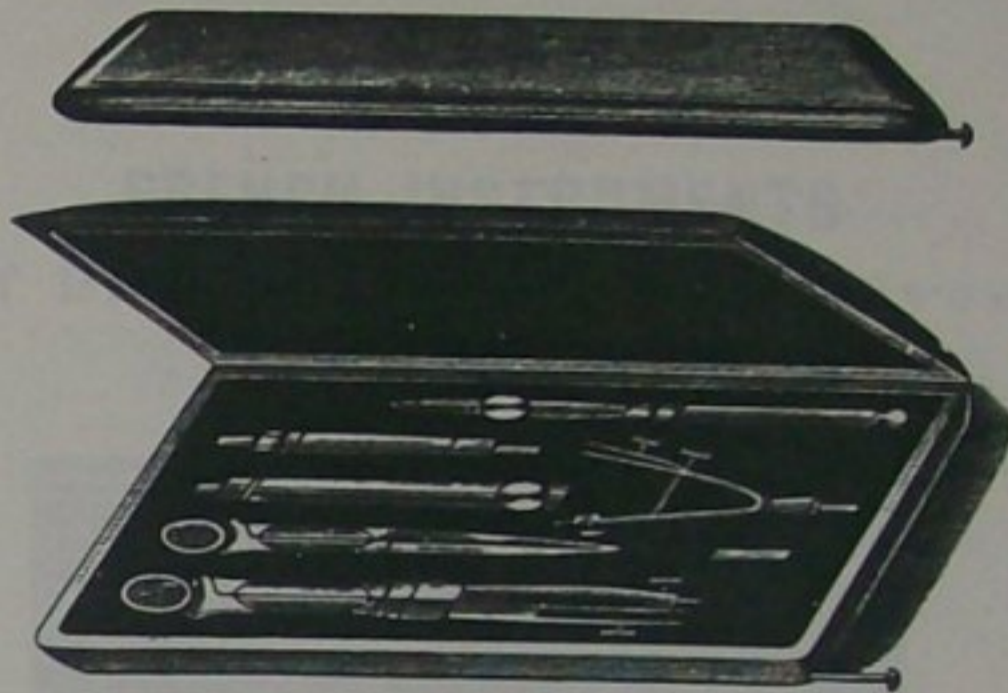
310. contg.: 1 Compass, 5½ inch, with Pen, Pencil, Needle Points and Lengthg. Bar, 1 Dividers, 5 inch, 1 Compass, 3½ inch, with Pen, Pencil, Needle Points, 1 Steel Spring Bow Pen with Needle Point, 1 Drawing Pen, 4 inch, 1 Drawing Pen, 6 inch, with Pin, 1 Semicircular Protractor, 1 boxwood Scale, 1 Triangle . . . . . each \$ 15 00
311. " The same as No. 310 instead of Dividers, 5 inch, 1 Hairspring Dividers, 5 inch, and: 1 Steel Spring Dividers, 1 Steel Spring Bow Pencil " 19 00



CASES OF GERMAN SILVER INSTRUMENTS

very best Quality.

IN FINE POCKET MOROCCO CASE.



No. 315.

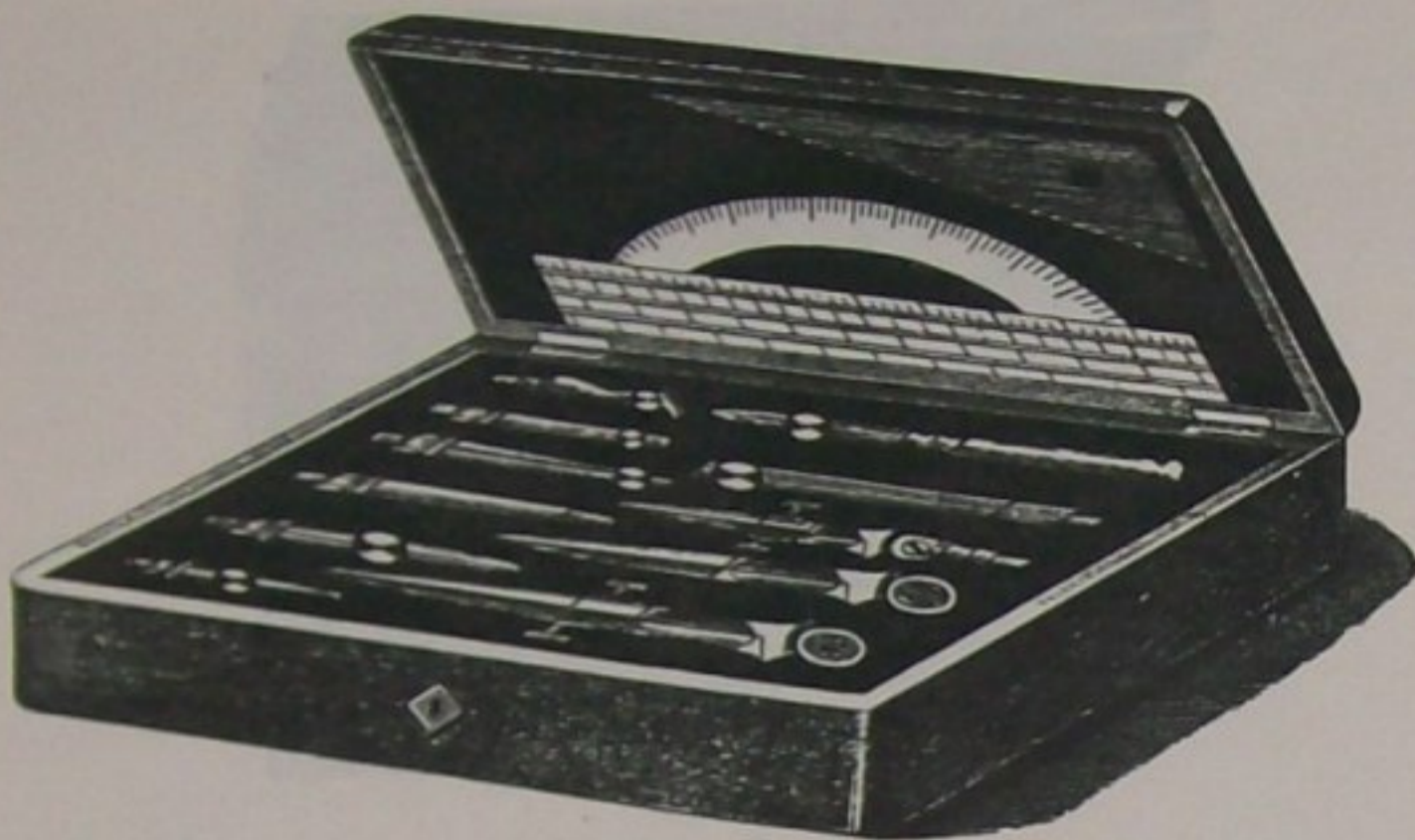
- |      |         |  |              |
|------|---------|--|--------------|
| 315. | contg.: | 1 Compass, 4½ inch, with fixed Needle Point,<br>Pen and Pencil Points and Lengthening Bar,<br>1 Divider, 4½ inch,<br>1 Steel Spring Bow Pen, with Needle Point No. 283,<br>1 Drawing Pen, with Pin . . . . . | each \$ 8 50 |
| 316. | contg.: | No. 255, 259, 275 . . . . .  | " 9 00       |
| 317. | "       | No. 255, 259, 251, 175 . . . . .   | " 12 00      |
| 318. | "       | No. 255, 259, 251, 272, 275, 283 . . . . .   | " 14 00      |
| 319. | "       | No. 257, 259, 251, 272, 275, 282, 283, 284 . . . . .   | " 18 00      |
|      |         | No. 316-319 contg.: Scale and Rubber Triangle, extra . . . . .   | " 60         |

In fine polished Black Walnut Case with Lock and Tray.



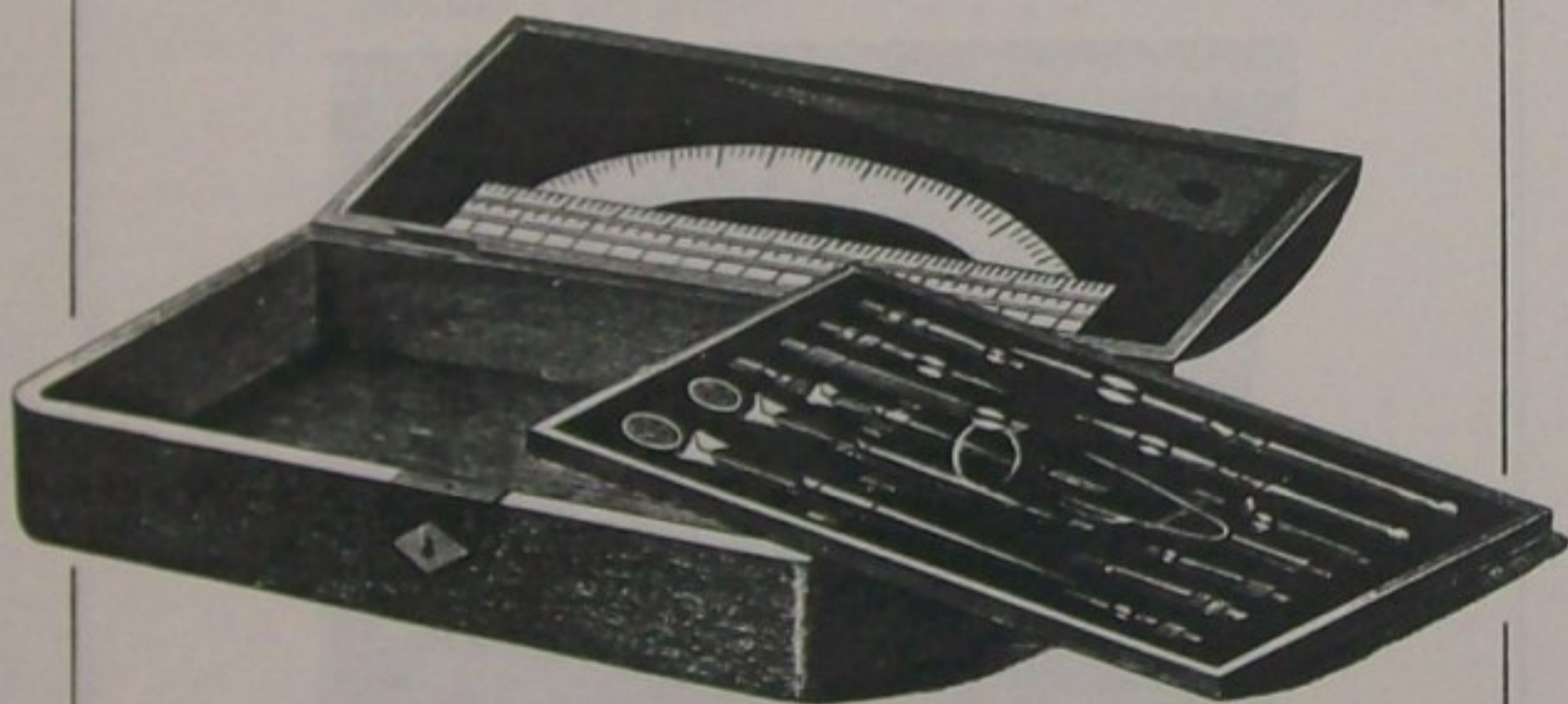
No. 322.

- |      |         |  |               |
|------|---------|--|---------------|
| 322. | contg.: | No. 255, 259, 275, 283,<br>1 Ivory Protractor, 1 Rubber Triangle . . . . . | each \$ 12 00 |
|------|---------|--|---------------|



No. 323.

323. contg.: No. 255, 259, 251, 275,  
1 Ivory Protractor, 1 Rubber Triangle. . . . each \$ 14 00

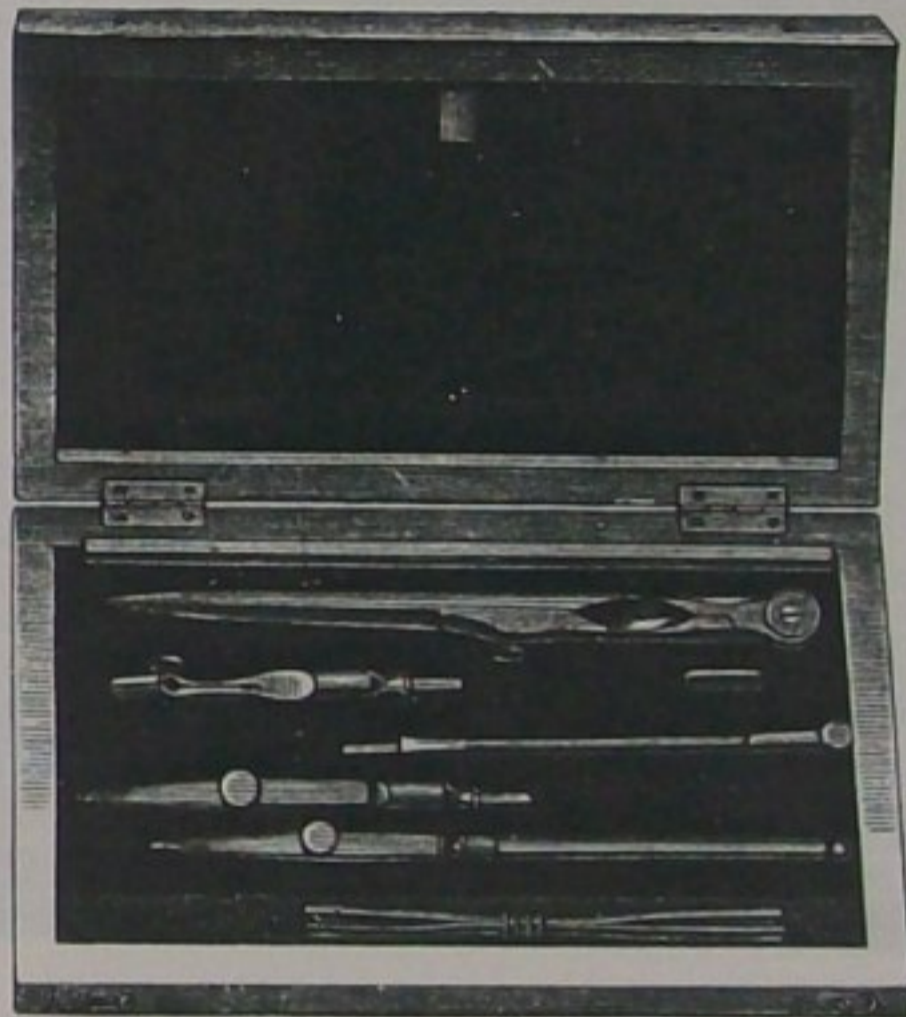


No. 324.

324. contg.: No. 255, 259, 251, 283, 272, 275,  
1 Semicircular Protractor, 1 Scale, 1 Rubber Triangle each \$ 17 50  
325. " No. 257, 259, 251, 272, 275, 282, 283, 284,  
1 Semicircular Protractor, 1 Scale, 1 Rubber Triangle " 21 75  
326. " 255, 257, 259, 251, 272, 275, 281, 264, 282, 283, 284  
1 Semicircular Protractor, 1 Scale, 1 Rubber Triangle " 32 00

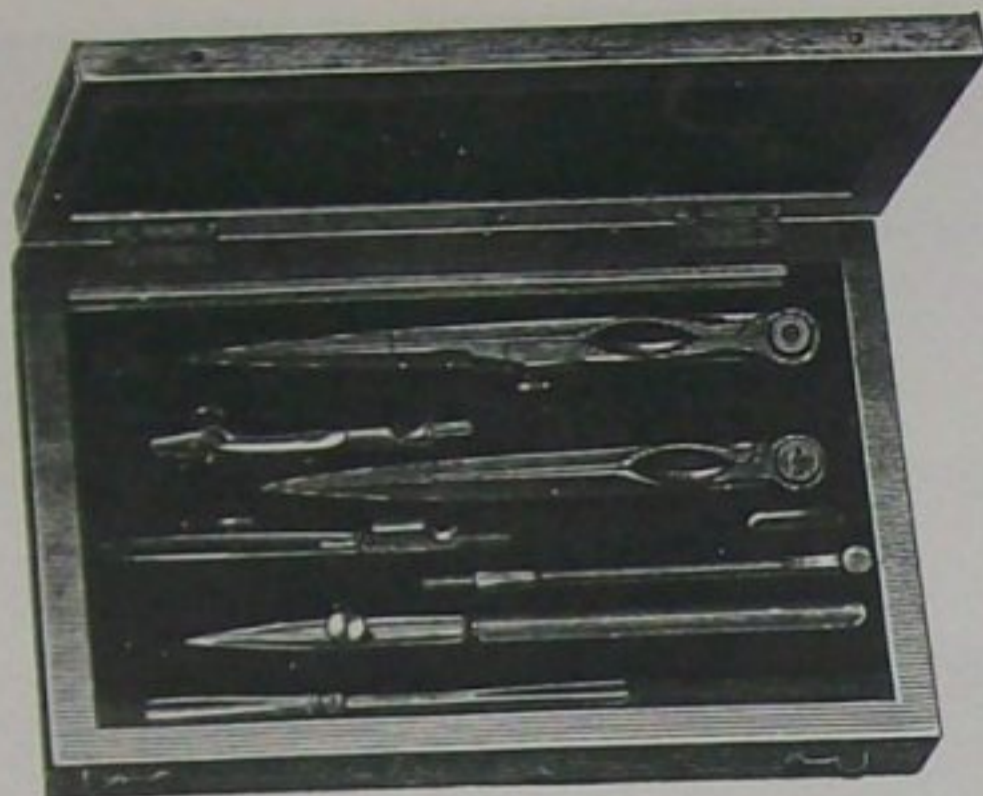
Larger Cases to contain any of the Instruments specified in this Catalogue, made up to order.

**FRENCH INSTRUMENTS**  
of Brass and German Silver  
in Cases.



No. 342.

340. Mahogany Case, contg. 6 pieces, **Brass**.  
 1 Pair Compasses, 4½ inch, with Pen and Pencil Points,  
 1 Crayonholder, 1 Key, 1 Rule . . . . . each \$ 75
341. Mahogany Case, contg. 8 pieces, **Brass**.  
 1 Pair Compasses, 4½ inch, with Pen, Pencil Points  
 and Lengthg. Bar.  
 1 Crayonholder, 1 Protractor, 1 Key, 1 Rule . . . . . each \$ 90
342. Mahogany Case, contg. 9 pieces, **Brass**.  
 1 Pair Compasses, 4½ inch, with Pen, Pencil Points  
 and Lengthg. Bar.  
 1 Drawing Pen, 1 Crayonholder, 1 Protractor, 1 Key, 1 Rule each \$ 1 05



No. 345.

345. Mahogany Case, contg. 10 pieces, **Brass**  
 1 Pair Compasses, 4 $\frac{1}{2}$  inch with Pen, Pencil Points  
 and Lengthg. Bar.  
 1 Pair Dividers, 3 $\frac{1}{2}$  inch, 1 Drawing Pen,  
 1 Protractor, 1 Crayonholder, 1 Key, 1 Rule . . . each \$ 1 15
346. Mahogany Case, the same as No. 345,  
 Compasses 1 inch longer . . . . . " 1 45



No. 347.

347. Mahogany Case, contg. 12 pieces, **Brass**.  
 1 Pair-Compasses, 4 $\frac{1}{2}$  inch, with Pen, Pencil Points,  
 and Lengthg. Bar,  
 1 Pair Dividers, 3 $\frac{1}{2}$  inch, 1 Bow Pen with Pencil Point,  
 1 Drawing Pen, 1 Protractor, 1 Key, 1 Rule . . . each \$ 1 60

- 348.— Mahogany Case, contg. 12 pieces, **Brass**  
 the same as No. 347  
 but Compasses 5½ and 4½ inch long . . . . . each \$ 2 00
349. Rosewood Case, contg. 12 pieces, **Brass**  
 the same as No. 348 . . . . . each \$ 2 40
350. Rosewood Case, with Lock and Tray, contg. 12 pieces, **Brass**  
 the same as No. 348 . . . . . each \$ 2 85
351. Rosewood Case, with Lock and Tray, contg. 12 pieces,  
**German Silver**  
 the same as No. 348 . . . . . each \$ 5 00
352. Rosewood Case, with Lock and Tray, contg. 12 pieces, **Brass**  
 the same as No. 350  
 but Compasses 6½ and 5½ inch long . . . . . each \$ 8 30



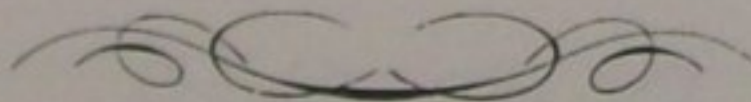
No. 355.

355. Rosewood Case, with Lock and Tray, contg. 16 pieces, **Brass**  
 1 Pair Compasses, 6½ inch, with Pen, Pencil Points  
 and Lengthg. Bar.  
 1 Pair Compasses, 3½ inch, with Pen and Pencil Points,  
 1 Pair Dividers, 4½ inch, 1 Bow Pen with Pencil Point,  
 1 Drawing Pen, 2 Protractors, 1 Key, 1 Rule . . . . . each \$ 3 70
356. Rosewood Case, with Lock and Tray, contg. 16 pieces, **Brass**  
 the same as No. 355. The Compasses with **Needlepoints** . . . . . each \$ 4 50
357. Rosewood Case, with Lock and Tray,  
 contg. 16 pieces, **German Silver**  
 the same as No. 355 . . . . . each \$ 7 50
358. Rosewood Case, with Lock and Tray, contg. 16 pieces,  
**German Silver**, the same as No. 357.  
 the Compasses with **Needlepoints** . . . . . each \$ 8 00

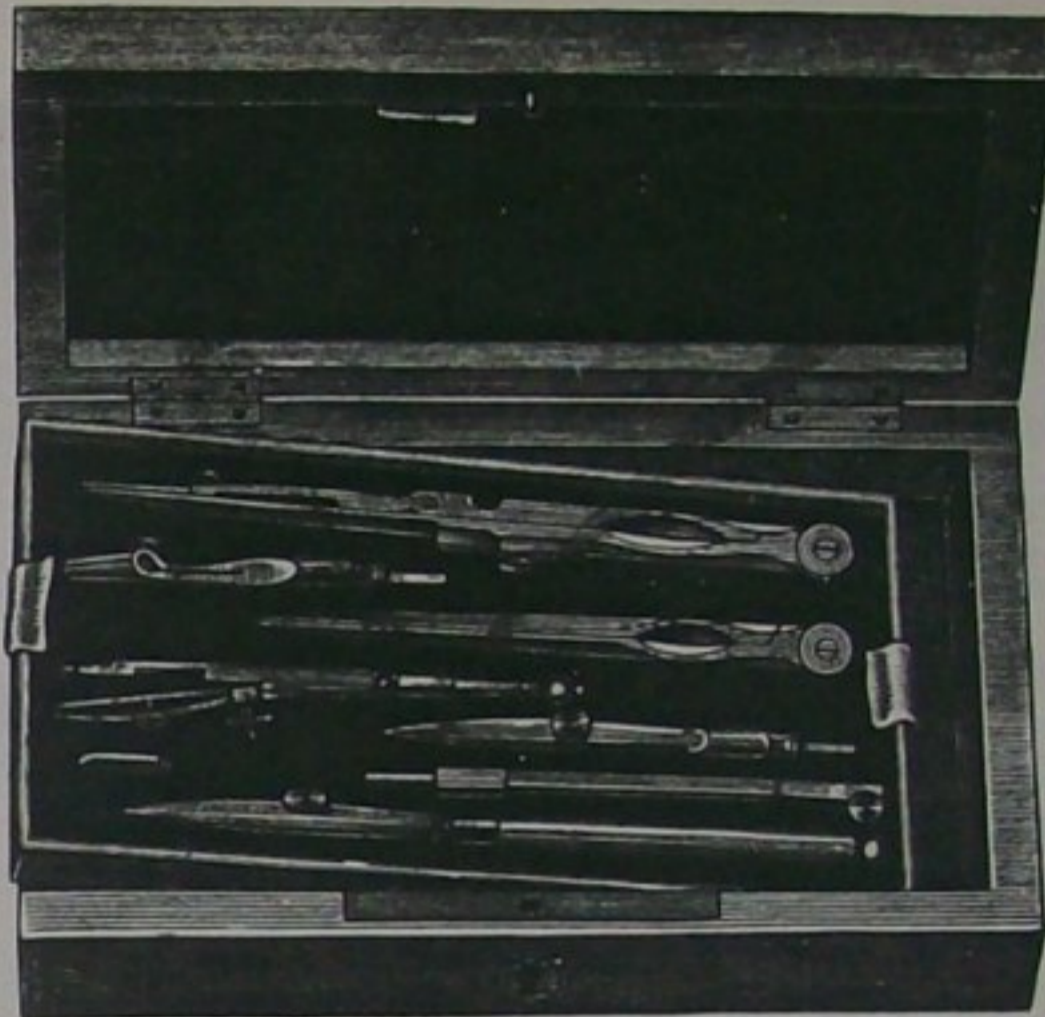


## No. 355 P.

- 355 P. Rosewood Case, with Lock and Tray, contg. 17 pieces, **Brass**  
 1 Pair Compasses, 6 $\frac{1}{4}$  inch, with Pen, Pencil Points  
 and Lengthening Bar.  
 1 Pair Compasses, 3 $\frac{1}{4}$  inch, with Pen and Pencil Points  
 1 Pair Dividers, 4 $\frac{1}{4}$  inch, 1 Bow Pen with Pencil Point  
 1 Proportional Divider,  
 1 Drawing Pen, 2 Protractors, 1 Key, 1 Rule . . . each \$ 6 80
- 357 P. Rosewood Case, with Lock and Tray, contg. 17 pieces,  
**German Silver**  
 the same as No. 355 P . . . . . each \$ 9 75



No. 360.



360. Rosewood Case, with Lock and Tray, contg. 9 pieces, Brass  
 1 Pair Compasses, with Needle Point, 5½ inch, with  
 Pen, Pencil Points and Lengthg. Bar.  
 1 Pair Dividers, 4½ inch, 1 Spring Bow Pen,  
 1 Drawing Pen, 1 Protractor, 1 Key . . . . . each \$ 4 00
361. Rosewood Case, with Lock and Tray, contg. 9 pieces,  
 German Silver. The same as No. 360 . . . . . each \$ 5 75

No. 360-2.

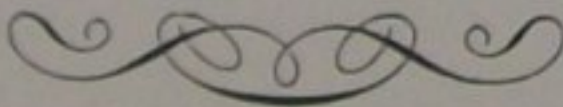


- 360-2. Pocket Case, covered with fine cloth, contg. 9 pieces, Brass  
 the same as No. 360 . . . . . each \$ 4 00
- 361-2. Pocket Case, covered with fine cloth, contg. 9 pieces,  
 German Silver, the same as No. 361 . . . . . each \$ 5 50



## No. 362.

362. Rosewood Case, with Lock and Tray, contg. 14 pieces, **Brass**  
 1 Pair Compasses, with Needle Point, 6 $\frac{1}{2}$  inch, with  
 Pen, Pencil Points and Lengthg. Bar.  
 1 Pair Compasses, with Needle Point, 4 $\frac{1}{2}$  inch, Pen  
 and Pencil Points,  
 1 Pair Dividers, 4 $\frac{1}{2}$  inch, 1 Spring Bow Pen,  
 1 Drawing Pen, 2 Protractors, 1 Rule, 1 Key . . . each \$ 5 00
363. Rosewood Case, with Lock and Tray, contg. 14 pieces,  
**German Silver**  
 the same as No. 362 . . . . . each \$ 7 75
364. Rosewood Case, with Lock and Tray, contg. 14 pieces, **Brass**,  
 the same as No. 362, but with Patent Pencil Points . . . each \$ 5 75







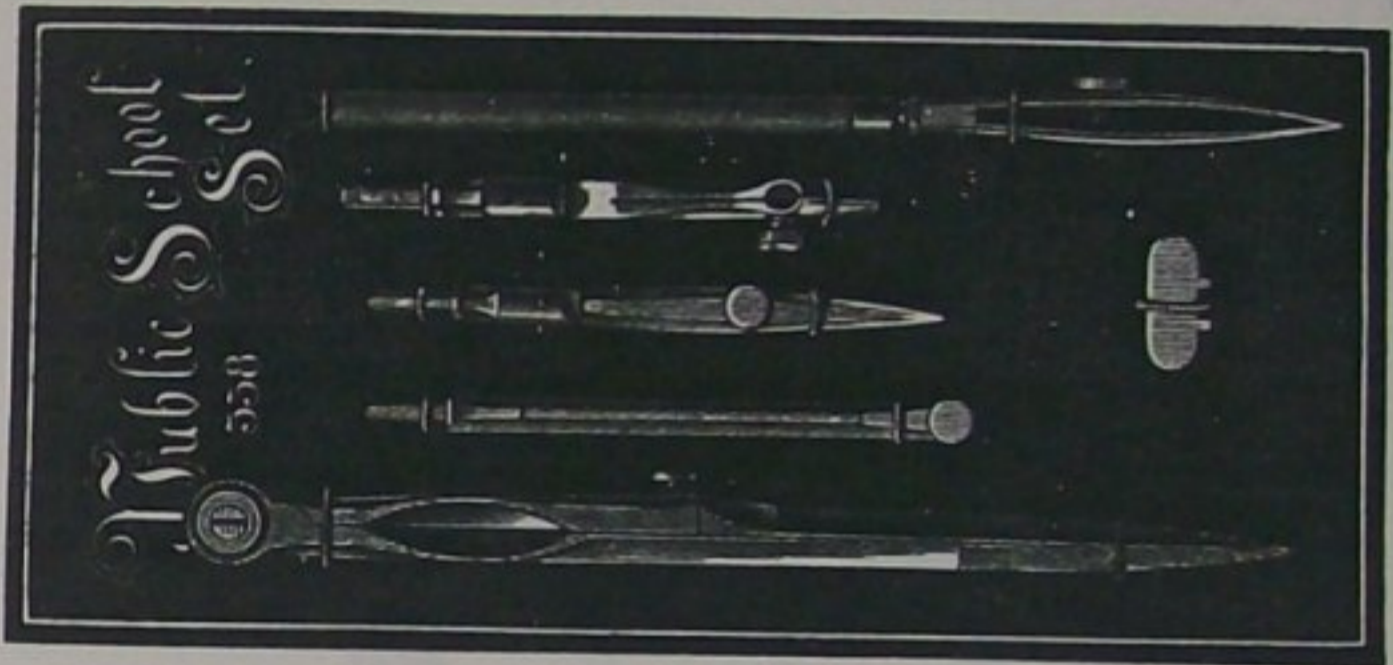
No. 366.

365. Rosewood Case, with Lock and Tray, contg. 15 Pieces, **Brass**  
 the same as No. 366, but with Patent Pencil Points each \$ 8 00
366. Rosewood Case, with Lock and Tray, contg. 15 pieces, **Brass**  
 1 Pair Compasses with Needle Point, 6½ inch, with  
 Pen, Pencil Points and Lengthg. Bar.  
 1 Pair Compasses with Needle Point, 4½ inch, with  
 Pen and Pencil Points,  
 1 Pair Dividers, 4½ inch, 1 Spring Bow Pen,  
 1 Proportional Dividers,  
 1 Drawing Pen, 2 Protractors, 1 Key . . . . . each \$ 7 50
367. Rosewood Case, with Lock and Tray, contg. 15 pieces,  
**German Silver**  
 the same as No. 366 . . . . . each \$ 11 00
368. Rosewood Case, with Lock and Tray, contg. 15 pieces,  
**German Silver**  
 the same as No. 367, but with Patent Pencil Points each \$ 12 00
369. Rosewood Case, with Lock and Tray, contg. 19 pieces,  
 the same as No. 368 and with Beam Compasses  
 No. 390 . . . . . each \$ 18 50

370. Rosewood Case, inlaid, with Lock and Tray,  
contg. 13 pieces, **German Silver**  
1 Pair Compasses with Needle Point, 6½ inch, with  
Pen, Patent Pencil Points and Lengthg. Bar.  
1 Pair Compasses, 4½ inch, with handle, with Needle  
Point, Pen and Patent Pencil Points,  
1 Pair Dividers, 4½ inch, 1 Spring Bow Pen,  
1 Proportional Dividers,  
3 Drawing Pens, 2 Protractors,  
1 8 inch Ivory Rule, 1 Key . . . . . each \$ 24 00
371. Rosewood Case, inlaid, with Lock and Tray,  
contg. 22 pieces, **German Silver**  
1 Pair Compasses with Needle Point, 6½ inch, with  
Pen, Patent Pencil Points and Lengthg. Bar,  
1 Pair Compasses, 4½ inch, with handle, with Needle  
Point, Pen and Patent Pencil Points,  
1 Pair Dividers, 4½ inch, 1 Proportional Dividers,  
1 Steel Spring Dividers, 1 Steel Spring Bow Pen,  
1 Steel Spring Bow Pencil, 3 Drawing Pens,  
1 8 inch Ivory Rule, 2 Protractors, •  
1 Key, 2 Triangles, 1 Curve . . . . . each \$ 29 00
372. Rosewood Case, inlaid, with Lock and Tray, contg. 26 pieces,  
**German Silver**  
the same as No. 371, but with Beam Compasses . each \$ 36 50

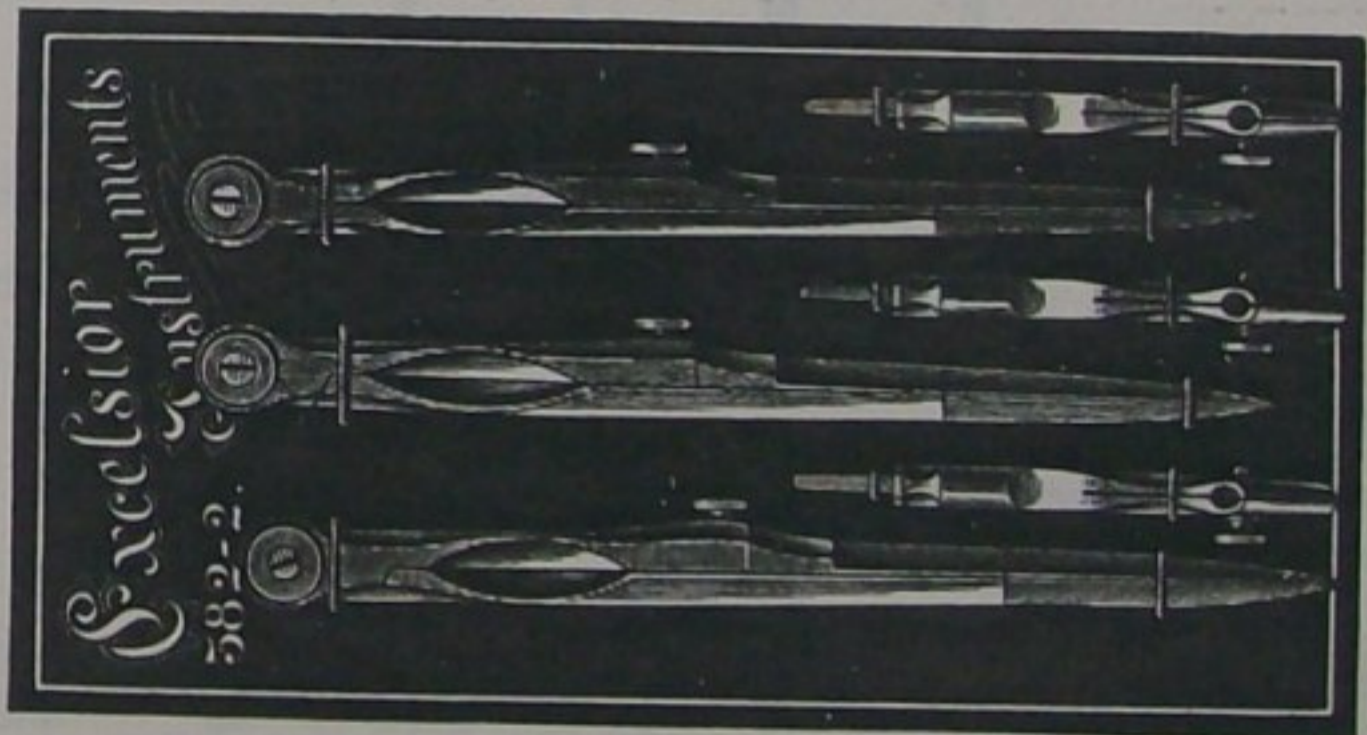


FRENCH INSTRUMENTS ON CARDS.



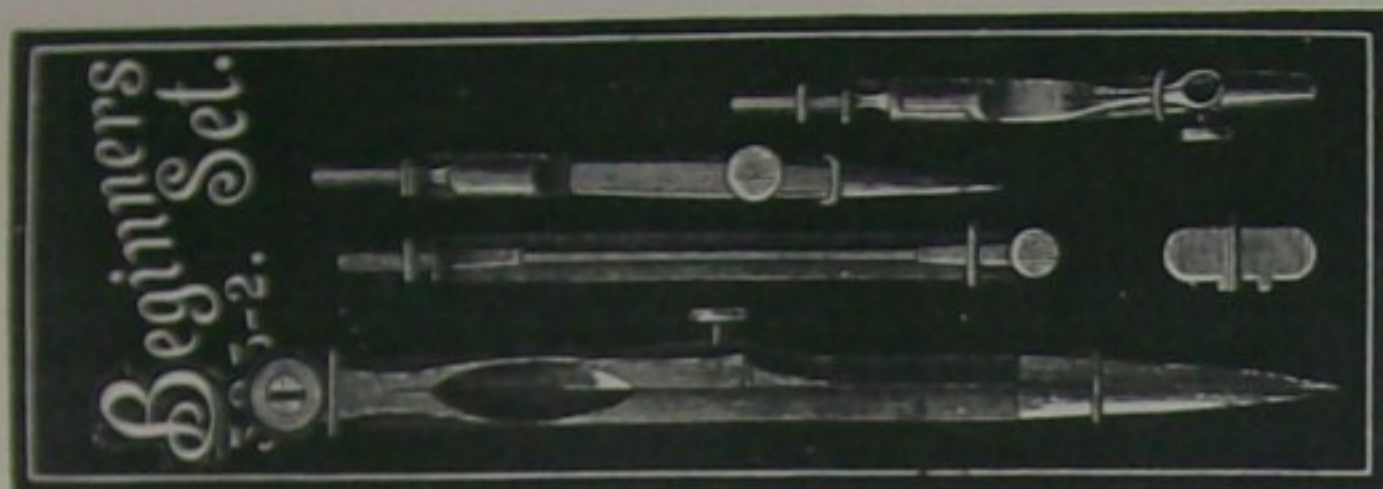
No. 338.

338. Brass, 1 Pair Compasses, 5½ inch, with Pen, Pencil Point  
and Lengthening Bar, Key, Ruling Pen . . . . each \$ 1 00



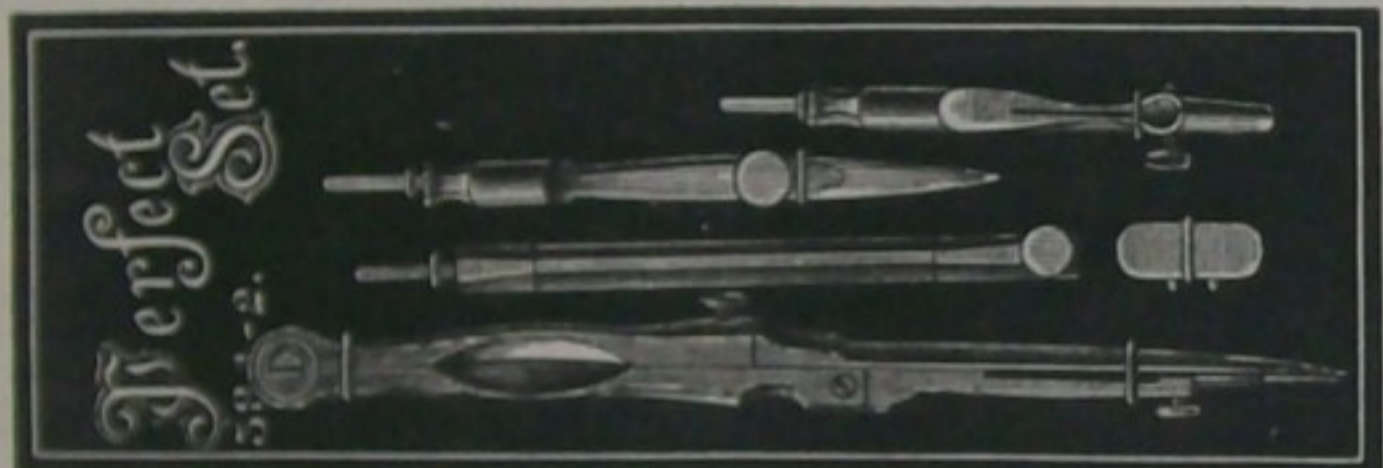
No. 382-2.

382-1.	Brass, 1 Pair Compasses, 4½ inch, with Pencil Point	each \$	45
382-2.	do. 5½ " " " "	"	55
382-3.	do. 6½ " " " "	"	65



No. 383-2.

383-1.	Brass, 1 Pair Compasses, 4½ inch, with Pen, Pencil Point and Lengthg. Bar, Key	each	\$	65
383-2.	" do. 5½ "	do.	do.	75
383-3.	" do. 6½ "	do.	do.	85



No. 384-2.

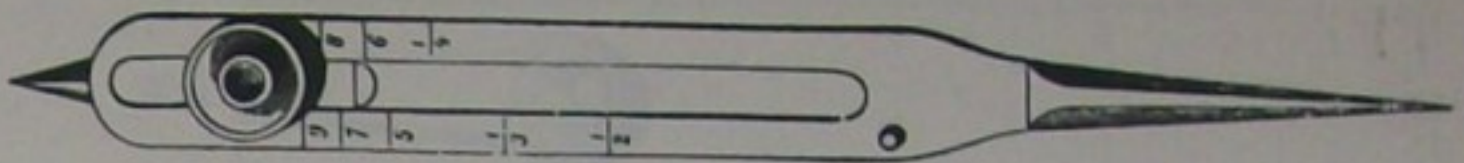
384-2.	Brass, 1 Pair Compasses, 5½ inch, with fixed Needle Point, Pen, Pencil Points and Lengthg. Bar, 1 Key	each	\$	1 00
385-2.	German Silver, 1 Pair Compasses, 5½ inch, the same as No. 383-2	"		1 50
385½-2.	German Silver, 1 Pair Compasses, 5½ inch, the same as No. 384-2	"		1 75

## FRENCH INSTRUMENTS, SEPARATE.



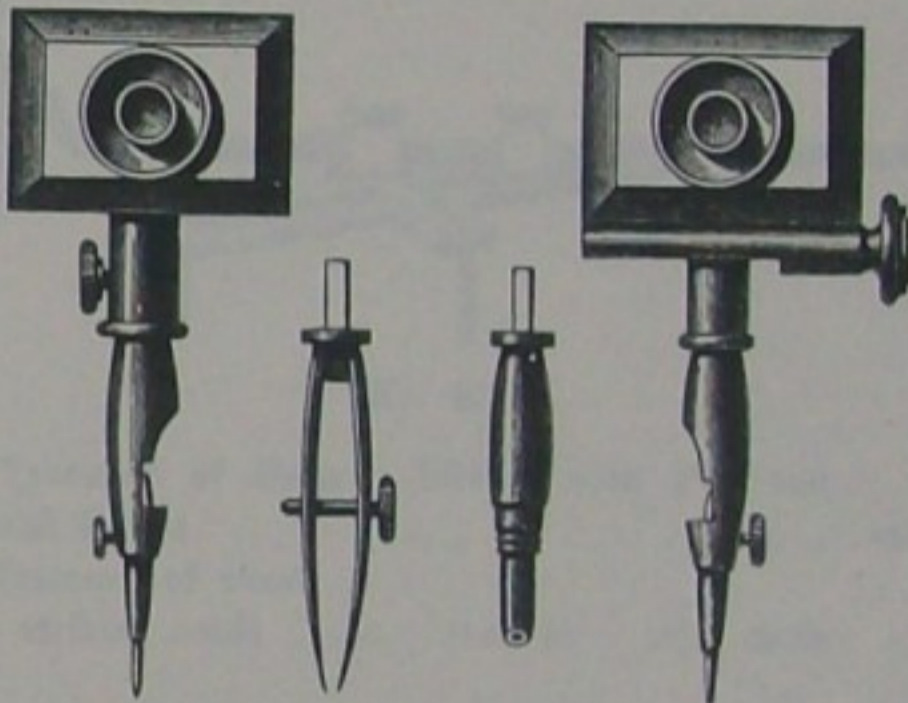
No. 380-2.

380-1.	Brass, Plain Dividers, 4½ inch	each	\$	30
380-2.	" do. 5½ "	"		35
380-3.	" do. 6½ "	"		40
381-2.	German Silver, Plain Dividers, 5½ inch	"		70



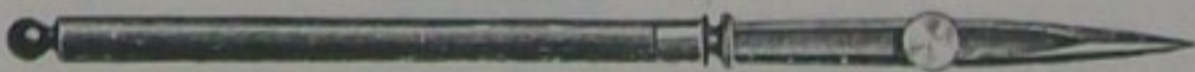
No. 386.

- |      |   |      |         |
|------|---|------|---------|
| 386. | Brass, Proportional Dividers, 6½ inch, in Case . . . . .  | each | \$ 2 50 |
| 387. | German Silver, do. do. 6½ " " " . . . . .   | "    | 3 30    |
| 388. | " do. do. 7 " . . . . .   | "    | 6 00    |
|      | with rackmovement, in Case . . . . .  | "    | 6 00    |
| 389. | German Silver, Proportional Dividers, 7 inch,<br>with rackmovement, divided for Lines, Circles, Solids<br>and Planes, in Case . . . . . | "    | 8 00    |



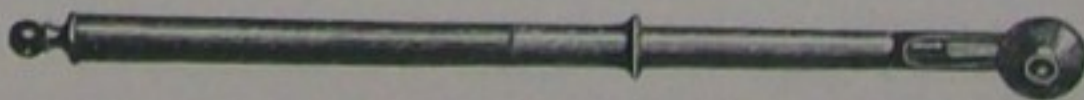
No. 390.

- |      |  |      |         |
|------|--|------|---------|
| 390. | German Silver Beam Compasses, with Pen and Pencil<br>Points in Box . . . . . | each | \$ 7 25 |
| 393. | Pocket Dividers, with folding Pen, Pencil and Needle[Points                  | "    | 7 00    |



No. 394.

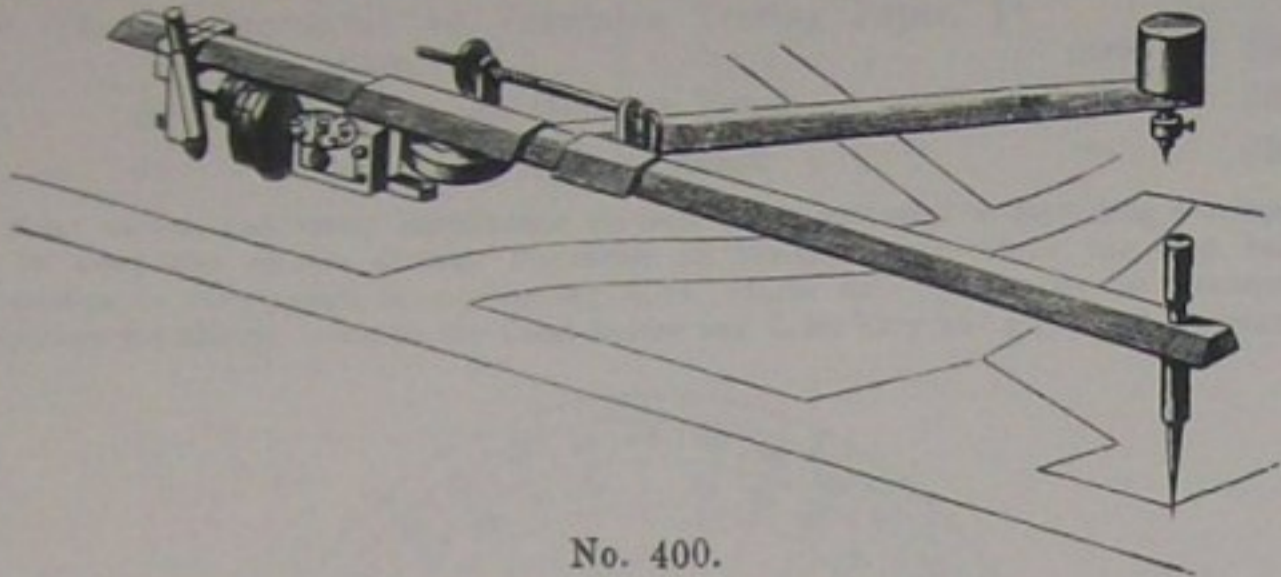
- |      |   |      |       |
|------|---|------|-------|
| 394. | Drawing Pen, Ebony Handle . . . . .       | each | \$ 20 |
| 395. | do. White Bone Handle, with Pen . . . . . | "    | 30    |



No. 396.

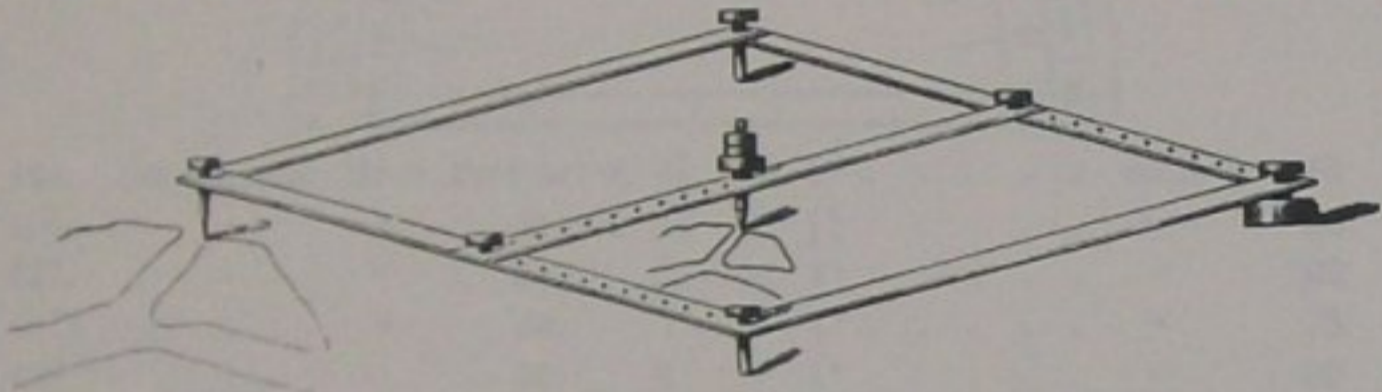
- |      |                         |      |         |
|------|-------------------------|------|---------|
| 396. | Dotting Wheel . . . . . | each | \$ 1 00 |
|------|-------------------------|------|---------|

PLANIMETER, PANTOGRAPHS ETC.



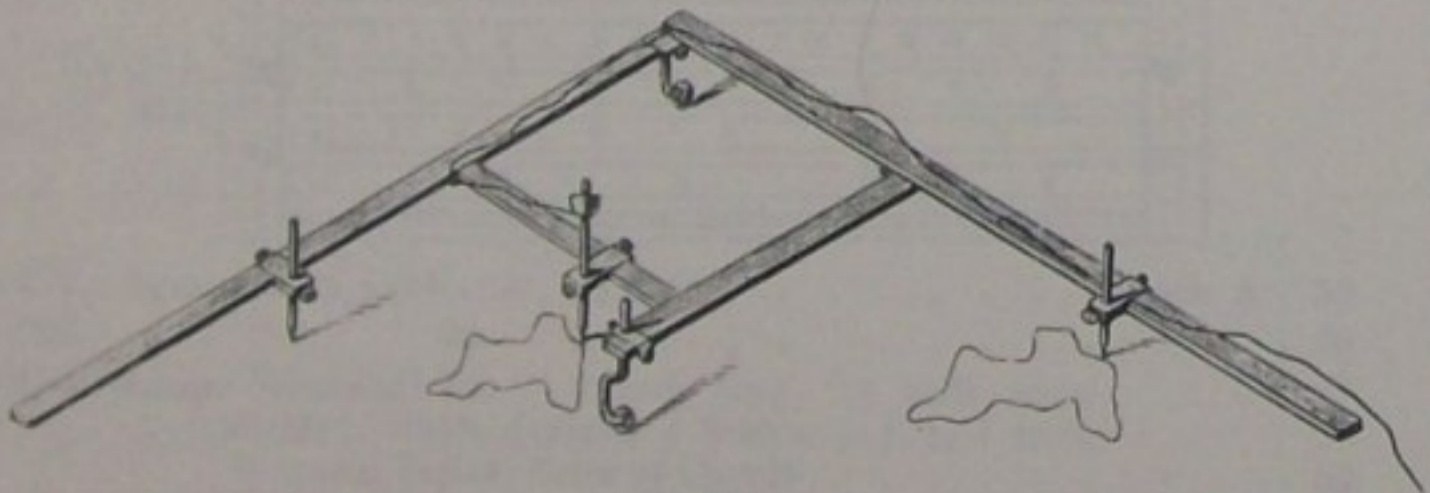
No. 400.

400. Planimeter, Amsler's Patent, of German Silver, for computing small areas, in Case, with directions how to use . . . . . each \$ 33 00



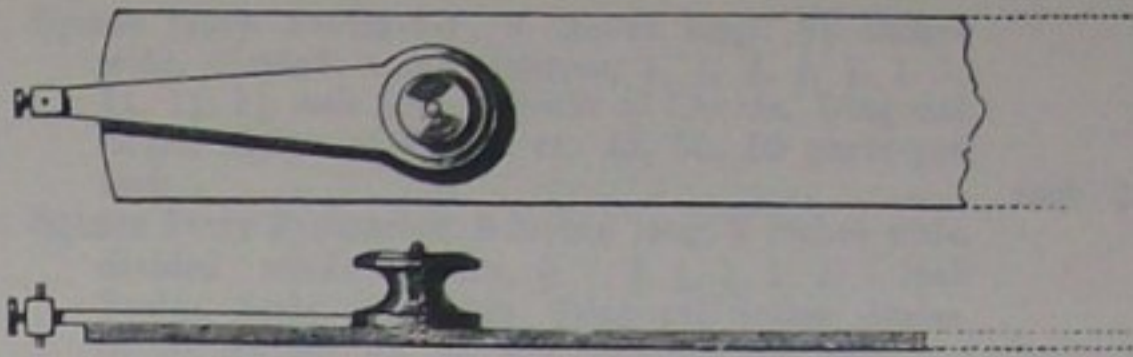
No. 402.

401. Pantograph of square brass Tubes, for reducing and enlarging: Engravings, Plans, Drawings etc. . . each \$ 80 00  
 similar to No. 411.  
 402. Pantograph of hard wood for reducing Plans and Drawings " 6 00  
 410. " " " " " " and enlarging, " 3 50  
 simple construction . . . . . " 3 50



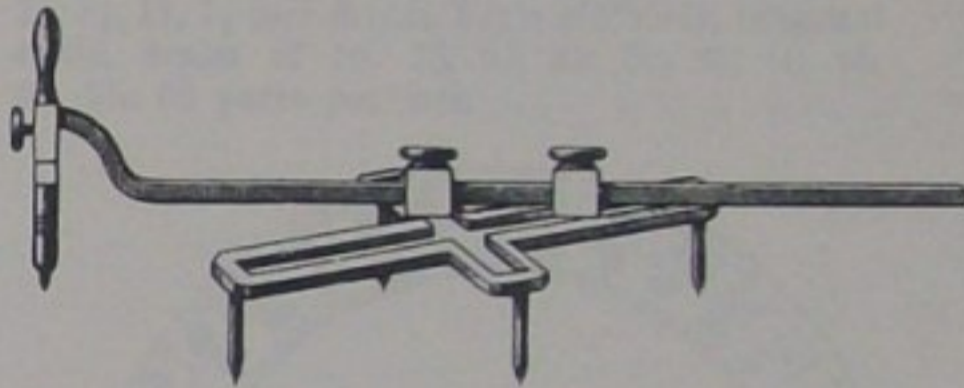
No. 411.

411. Pantograph of black wood, with Brass Joints and Mountings, Iron and Lead Weights and complete fittings, of good construction, for fine work, arms 20 inch long, in Case . . . . . each \$ 18 00  
 412. do. do. arms 25 inch long . . . . . " 22 00  
 413. do. do. " 30 " " . . . . . " 26 00  
 414. do. do. " 36 " " . . . . . " 30 00



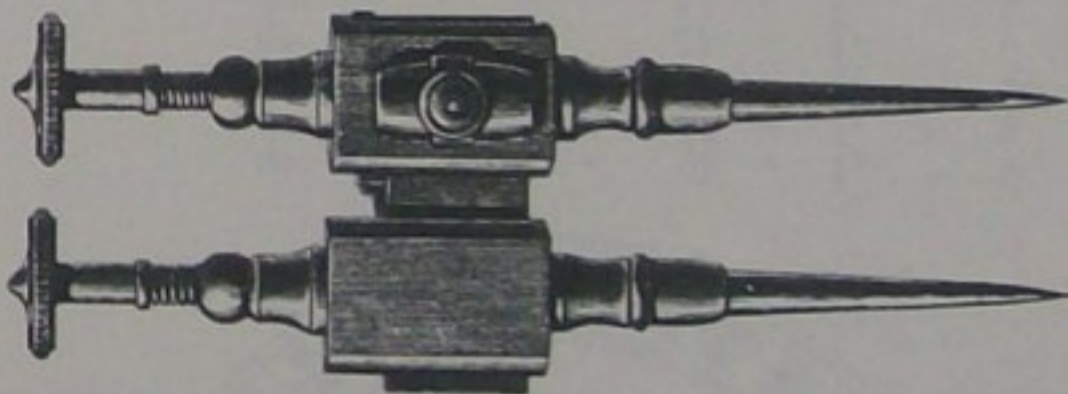
No. 403.

- 403. Excentrolinead, all German Silver, 9 inch . . . . . each \$ 3 50
- 404. Excentrolinead Ebony, German Silver mounted, 9 inch " 2 75
- 405. " all German Silver, sliding top, 9 inch " 4 00



No. 407.

- 407. Elliptic Trammel of German Silver, with Pen and Pencil Points . . . . . each \$ 6 00
- 408. Elliptic Trammel of wood for striking ovals × inch to × inch " 2 50



No. 409-2.

- 409-1. Brass Trammel Heads, 4 inch . . . . . each \$ 1 25
- 409-2. " do. with Pencil Holder, 5 inch . . . . . " 1 75
- 409-3. " do. " " " 5½ " . . . . . " 2 20

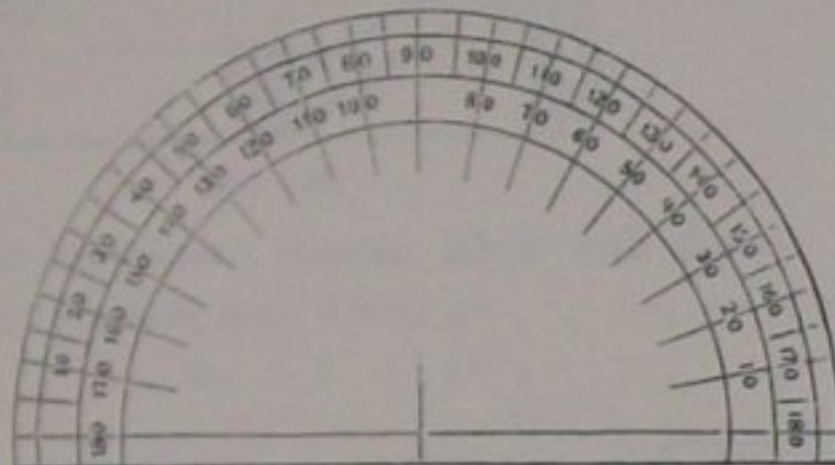


# PROTRACTORS.

- 419. Circular Protractor on Vegetable Tracing Paper,  $\frac{1}{4}^{\circ}$   
14 inch diam. . . . . each \$ 30
- 420. do. do. on Drawing Paper . . . . . " 30
- 421. do. do. " Bristol Board . . . . . " 40

After various and costly experiments we have finally succeeded in perfecting a competent and in every way reliable Circular Protractor on Tracing Paper, which has long been a desideratum to topographers in constructing maps, charts etc. These Circular Transparent Protractors are already in use in the Coast Survey and U. St. Navy and give entire satisfaction.

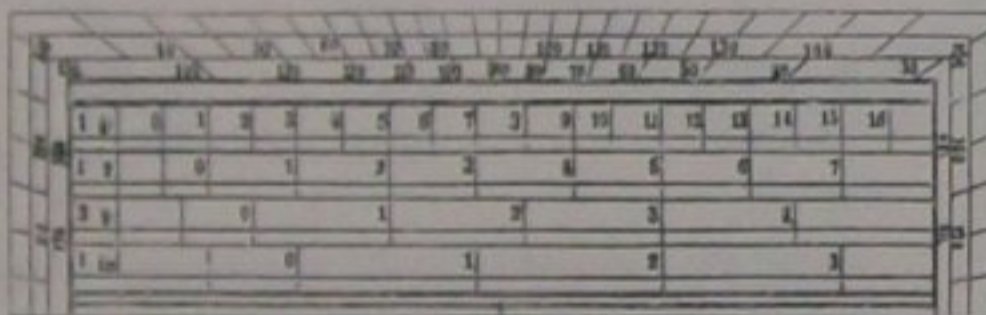
No. 426.



- 425. Semicircular Horn Protractor,  $4\frac{1}{2}$  inch  $\frac{1}{4}^{\circ}$  . . . . . each \$ 40
- 426. " " do.  $5\frac{1}{2}$  "  $\frac{1}{4}^{\circ}$  . . . . . " 50
- 427. " " do.  $6\frac{1}{2}$  "  $\frac{1}{4}^{\circ}$  . . . . . " 60
- 427 $\frac{1}{2}$ . " " do. 7 "  $\frac{1}{4}^{\circ}$  . . . . . " 75
- 428. " " do. 8 "  $\frac{1}{4}^{\circ}$  . . . . . " 1 00
- 429. " " do.  $8\frac{1}{2}$  "  $\frac{1}{4}^{\circ}$  . . . . . " 1 25
- 430 $\frac{1}{2}$ . Circular " do. 4 "  $1^{\circ}$  . . . . . " 1 50
- 430. " " do.  $5\frac{1}{2}$  "  $\frac{1}{4}^{\circ}$  . . . . . " 1 75
- 431. " " do.  $6\frac{1}{2}$  "  $\frac{1}{4}^{\circ}$  . . . . . " 2 00

No. 434.

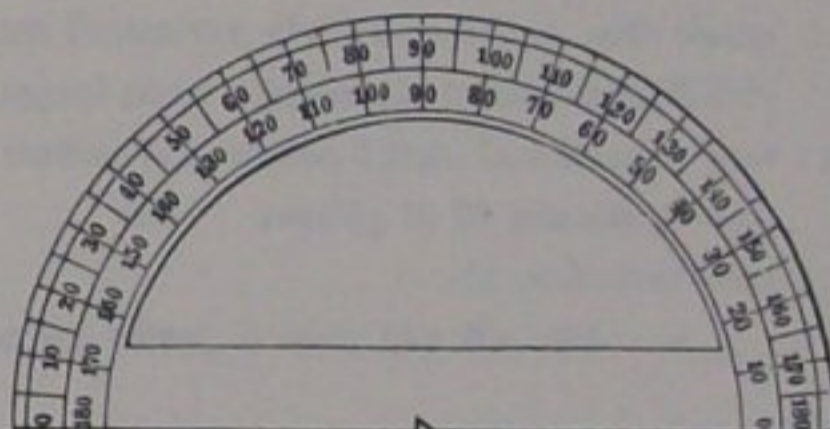
435.



- 432. Square Horn Protractor,  $4\frac{1}{2}$  inch  $\frac{1}{4}^{\circ}$  . . . . . each \$ 50
- 433. " " do. 6 "  $\frac{1}{4}^{\circ}$  . . . . . " 1 00
- 434. Square Boxwood do. 6 inch long,  $1\frac{1}{2}$  inch wide,  
divided: whole degrees, 4 Scales,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 inch,  
Diagonal Scales, Scale of Chords . . . . . " 50
- 435. Square Ivory Protractor, 6 inches long,  $1\frac{1}{2}$  inches wide,  
divided: whole degrees,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 inch Scales,  
Scale of Chords, Diagonal Scale, Scales of 30,  
35, 40, 45, 50, 60 parts per inch . . . . . " 1 75
- 435-1. Square Ivory Protractor, 6 inches long,  $1\frac{1}{2}$  inches  
wide, divided: whole degrees,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 inch Scales,  
 $\frac{1}{4}$ , 1 inch Scales, Scale of Chords, Diagonal Scale,  
Scales of 30, 35, 40, 45, 50, 60 parts per inch . . . . . " 2 25

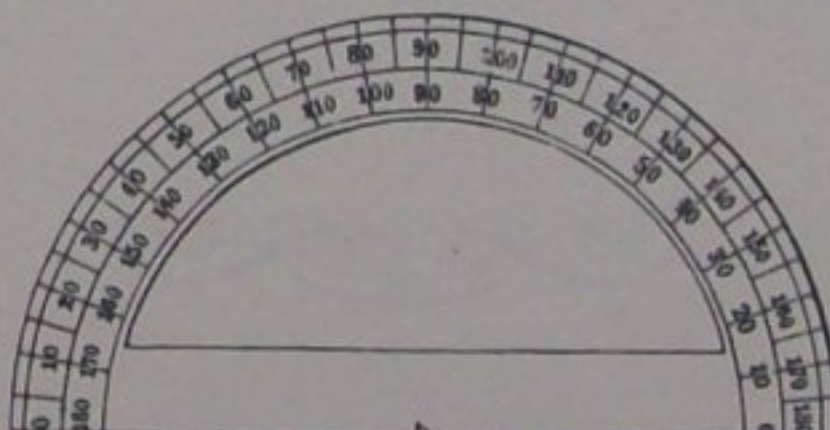


- 435—2. Square Ivory Protractor, 6 inches long, 2½ inches wide, divided: whole degrees, ½, 1, 1½, 2, 2½, 3, 1, 1½, 1½, 1½ inch Scales, Scale of Chords, Diagonal Scale, Scales of 30, 35, 40, 45, 50, 60 parts per inch . . . . . each \$ 5 00
- 435—3. Square Ivory Protractor, 8 inches long, 2 inches wide, divided: whole degrees, ½, 1, 1½, 2, 2½, 3, 1 inch Scales, Scale of Chords, Diagonal Scales, Scales of 20, 25, 30, 35, 40, 45, 50 parts per inch. . . . . " 5 00
- 435—4. Square Ivory Protractor, 8 inches long, 2½ inches wide, divided: whole degrees, ½, 1, 1½, 2, 2½, 3, 1, 1 inch Scales, Scale of Chords, Diagonal Scale, Scales of 20, 25, 30, 35, 40, 45, 50, 55, 60 parts per inch . . . . . " 7 00
- 435—5. Square Ivory Protractor, 12 inches long, 2½ inches wide, divided: ¼ degrees, ½, 1, 1½, 2, 2½, 3, 1, 1½, 1½, 1½, 1½ inch Scales, Scale of Chords, Diagonal Scale, Scales of 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60 parts per inch . . . . . " 12 00



No. 436.

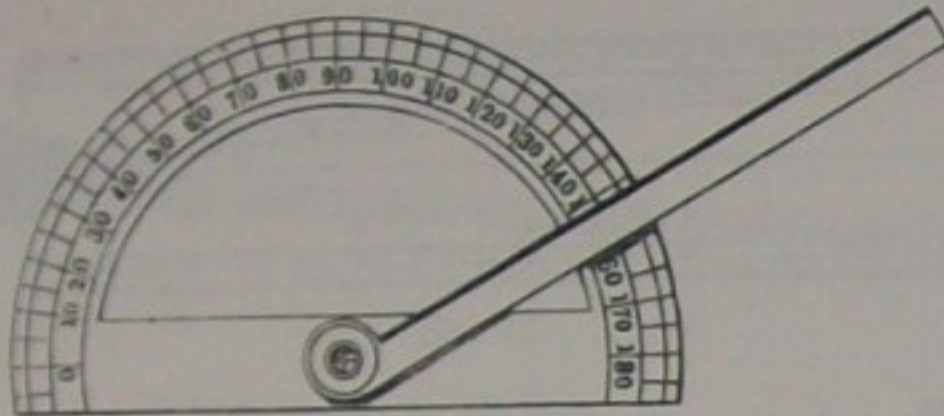
- |        |                                |         |    |       |         |      |
|--------|--------------------------------|---------|----|-------|---------|------|
| 436.   | Semicircular Protractor, Brass | 3½ inch | 1° | . . . | each \$ | 15   |
| 437.   | do. do.                        | 4½ "    | 1° | . . . | "       | 30   |
| 437—1. | do. do.                        | 5½ "    | 1° | . . . | "       | 60   |
| 437—2. | do. do.                        | 6½ "    | 1° | . . . | "       | 75   |
| 438.   | do. German Silver              | 4½ "    | 1° | . . . | "       | 75   |
| 439.   | do. do.                        | 5½ "    | 1° | . . . | "       | 1 00 |
| 440.   | do. do.                        | 6½ "    | 1° | . . . | "       | 1 25 |



No. 441. Centre on outer edge.

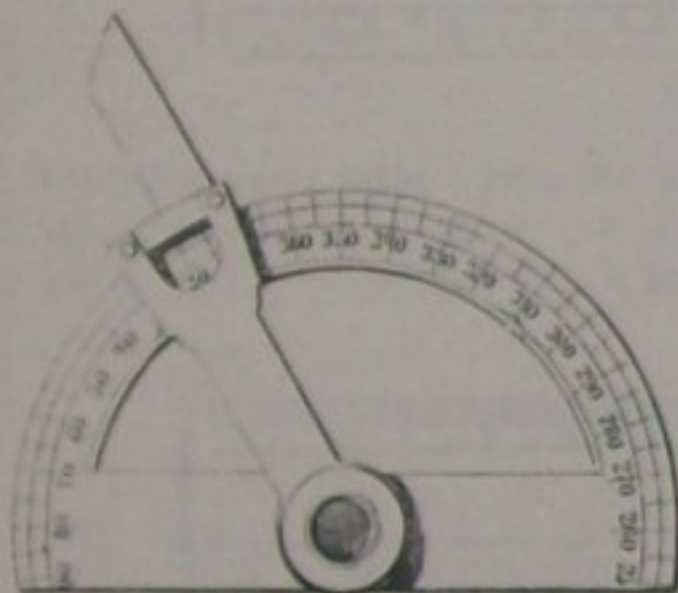
- |        |  |                  |    |       |      |         |      |
|--------|--|------------------|----|-------|------|---------|------|
| 441.   | Semicircular Protractor Swiss, German Silver | fine div. 4 inch | 1° | . . . | each |         |      |
|        |  |                  |    |       |      | \$ 2 00 | 2 50 |
| 442.   | do. do.                                      | 5 "              | ½° | . . . | "    | 2 60    | 3 00 |
| 443.   | do. do.                                      | 6 "              | ½° | . . . | "    | 3 25    | 3 75 |
| 443—1. | do. do.                                      | 6 "              | ¼° | . . . | "    | 4 00    | 4 50 |

444. Semicircular Protractor Swiss, German Silver,  
 7 inch  $\frac{1}{2}$  degrees . . . each \$ 5 50  
 445. do. do. 8 "  $\frac{1}{2}$  " . . . " 6 50

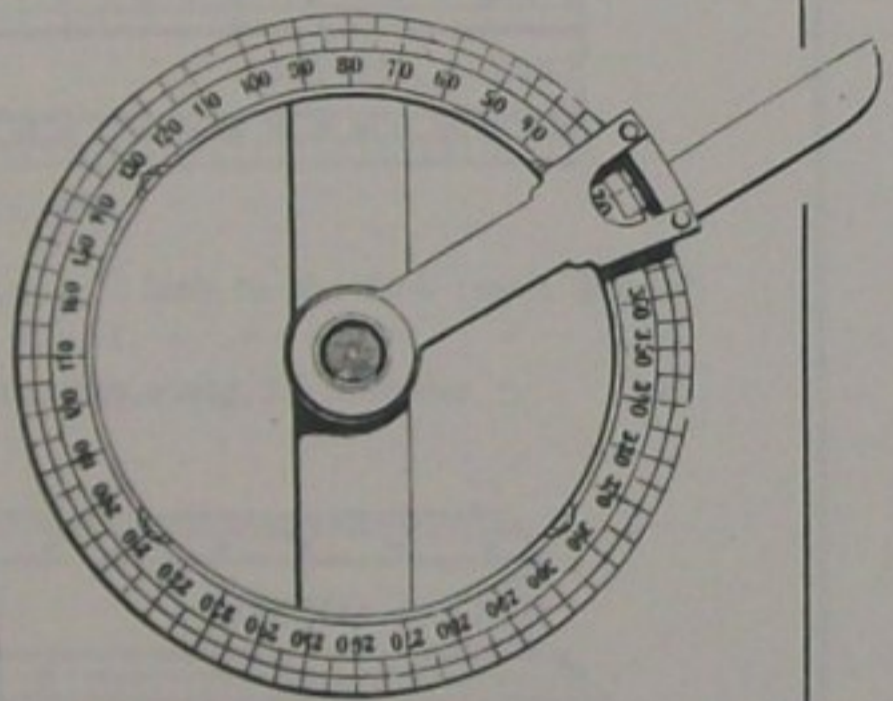


No. 446.

446. Semicircular Protractor, German Silver with Horn-  
 centre, movable arm, 6 inch  $\frac{1}{2}$ ° . . . . . each \$ 7 50  
 447. do. do. 7 "  $\frac{1}{2}$ ° . . . . . " 9 00



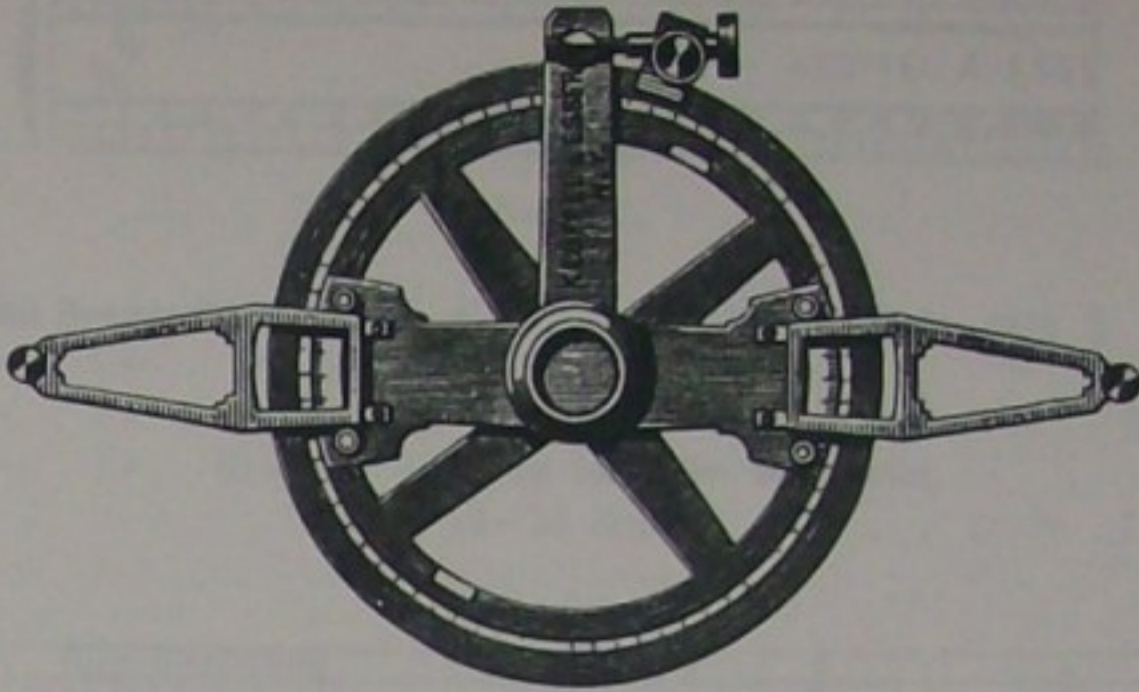
No. 448.



No. 452.

448. Semicircular fine German Silver Protractor, with Horn-  
 centre, Vernier reading to 3 minutes, 5  $\frac{1}{2}$  inch  $\frac{1}{2}$ ° each \$ 11 00  
 449. do. do. 8 "  $\frac{1}{2}$ ° " 14 50  
 450. do. do. reading to 1 minute, 10 "  $\frac{1}{2}$ ° " 18 00  
 451. Circular fine German Silver Protractor, 5 inch  $\frac{1}{2}$ ° . . . " 7 00  
 452. do. do. with Horncentre, Vernier  
 reading to 3 minutes, 5  $\frac{1}{2}$  inch  $\frac{1}{2}$ ° . . . " 14 00  
 453. do. do. 3 " 8 "  $\frac{1}{2}$ ° . . . " 16 25  
 453-1. do. do. 1 " 10 "  $\frac{1}{2}$ ° . . . " 20 00

Cases for Protractors, of wood, covered with morocco, lined with velvet according to size: from \$ 1 00 to \$ 5 00.



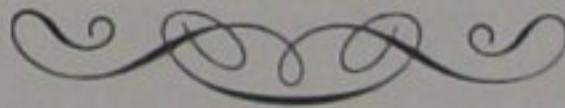
No. 454.

- |      |   |      |          |
|------|---|------|----------|
| 54.  | Circular Brass Protractor, divided on Silver, with clamp and tangent screw adjustment, folding arms, 2 Verniers reading to 1 minute, 6 inch, in mahogany case | each | \$ 72 00 |
| 455. | do. do. reading to 20 seconds, 8 inch, in mahogany case   | "    | 95 00    |
| 456. | do. German Silver, 6 inch, like No. 454 . . .   | "    | 85 00    |

## PAPER SCALES.

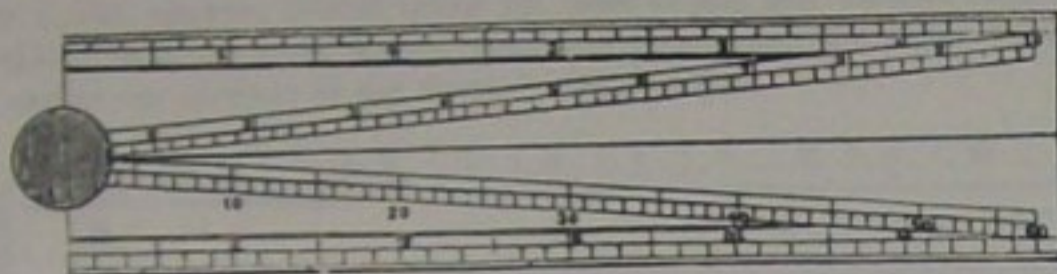
19 inch long, 1 1/4 inch wide.

- |      |   |         |
|------|---|---------|
| 475. | Series A, 6 in Set, div. 1/2, 1/3, 1/4, 1, 1 1/2, 3 inch to the foot, set | \$ 1 25 |
| 476. | " B, 6 " " " 1/32, 1/16, 1/8, 1/4, 1/2 " " " " "                          | 1 25    |
| 477. | " C, 6 " " " 10, 20, 30, 40, 50, 60 parts per inch                        | 1 25    |



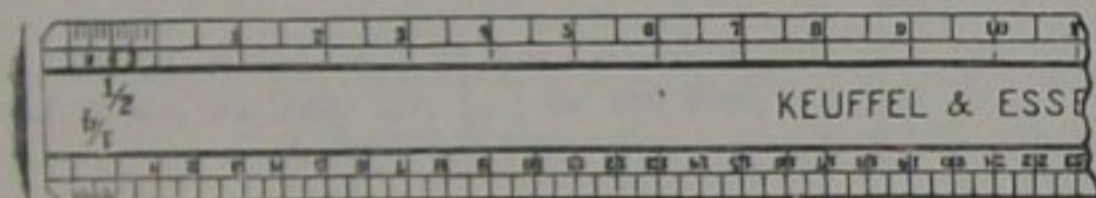
# IVORY AND BOXWOOD SCALES.

Hand divided.



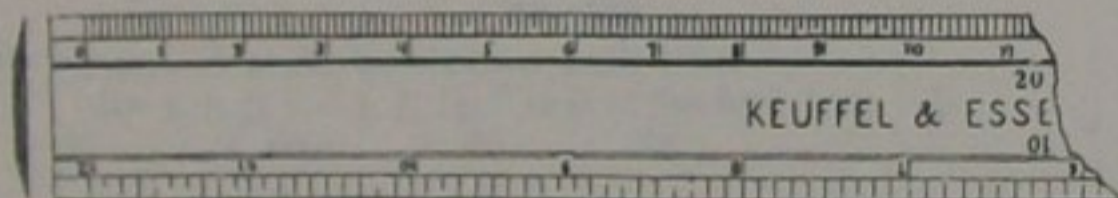
No. 480.

- 480. Ivory Sector, 6 inch, opens to 12 inch . . . . . each \$ 2 50
- 481. Boxwood Sector, 6 inch, opens to 12 inch . . . . . " 1 00
- 482. Ivory Plotting Scales, 6 inch . . . . . " 75
- 483. Boxwood Plotting Scale, 6 inch . . . . . " 15



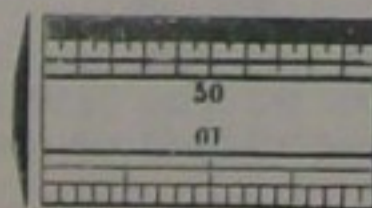
No. 485.

- 484. Flat Ivory Scale, 6 inch, div.  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1 inch to the foot each \$ 2 00
- 485. " " " 12 " "  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1 " " " " " 3 25
- 486. " " " 12 " " both sides, contg. 12-16 Scales " 3 50



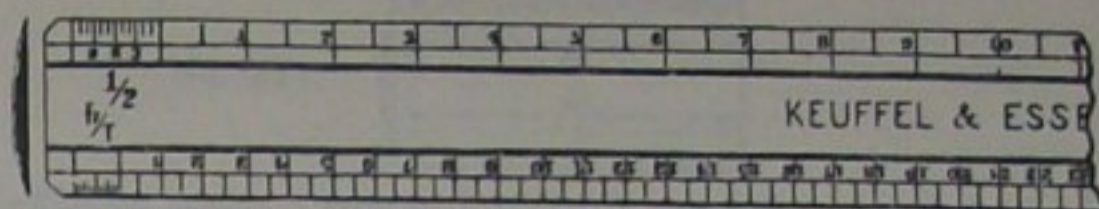
No. 487.

- 487. Flat Ivory Chain Scale, 12 inch, 10x50 parts per inch, each \$ 3 25
- 488. " " " " 12 " 20x40 " " " " " 3 25
- 489. " " " " 12 " 30x60 " " " " " 3 25
- 490. " " " " 12 " 80x100 " " " " " 5 50



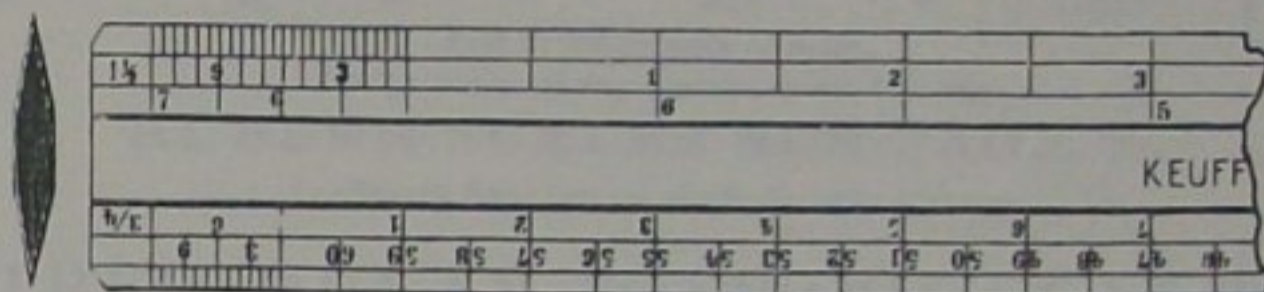
No. 491.

- 491. Flat Ivory Offset Scale, 2 inch to match No. 487, 488, 489, each \$ 60
- 494. " " " " 2 " " " " 490 . . . . . " 1 20



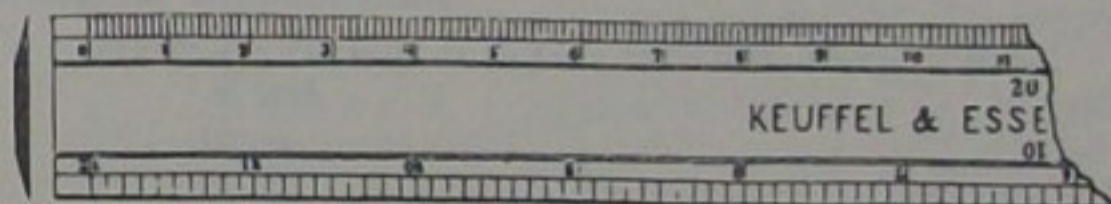
No. 496.

- 495. Flat Boxwood Scale, 6 inch, div.  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1 inch to the foot, each \$ 35
- 496. " " " 12 " "  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1 " " " " " 50
- 498. " " " 24 " "  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1 " " - " " 2 00
- 499. " " Universal Scale, 12 inch, div. both sides,  
contg. 12-16 Scales . . . . . " 1 25



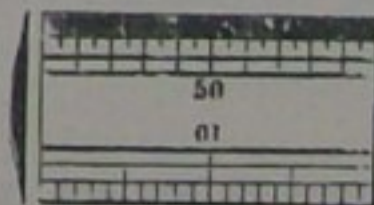
No. 500.

- 500. Boxwood Scale, beveled both sides, 24 inch,  
div.  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1  $\times$   $\frac{1}{2}$ , 1, 1  $\frac{1}{2}$ , 3 inch to the foot . each \$ 2 50



No. 505.

- 501. Flat Boxwood Chain Scale, 6 inch, div. 10  $\times$  50 parts per inch, each \$ 60
- 502. " " " " 6 " " 20  $\times$  40 " " " " 60
- 503. " " " " 6 " " 30  $\times$  60 " " " " 60
- 505. " " " " 12 " " 10  $\times$  50 " " " " 1 00
- 506. " " " " 12 " " 20  $\times$  40 " " " " 1 00
- 507. " " " " 12 " " 30  $\times$  60 " " " " 1 00



No. 509.

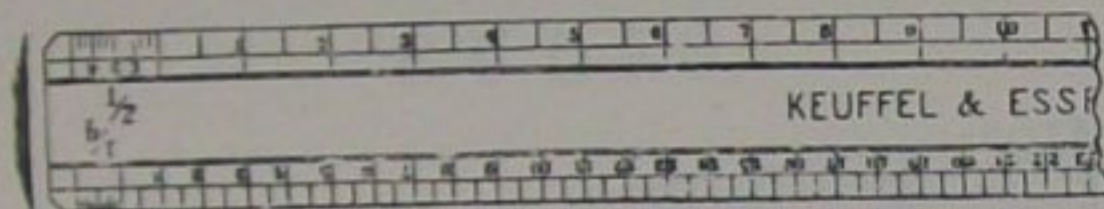
- 509. Flat Boxwood Offset Scale, 2 inch to match No. 505, 506, 507 each \$ 35

# IVORY AND BOXWOOD SCALES.

Machine divided.

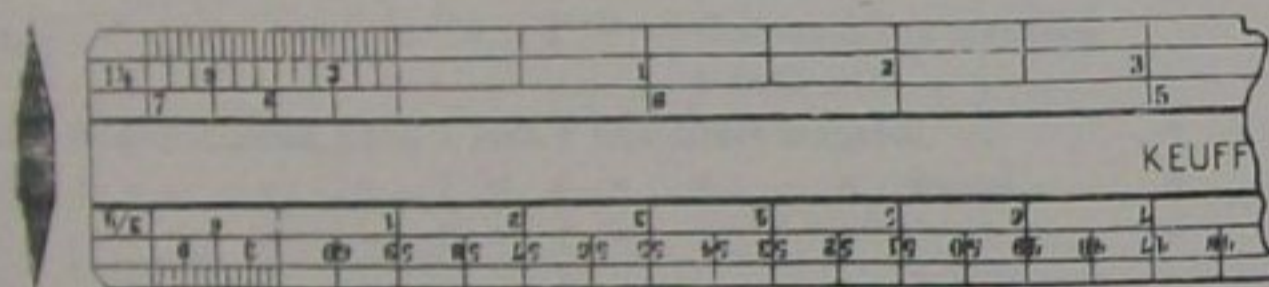
U. S. Std.

Our U. S. Std. machine divided Scales are made of the best selected Boxwood or Ivory, wider and thicker than the hand divided mentioned before, and of a better finish. They are superior in quality and accuracy to any others in the market.



No. 512.

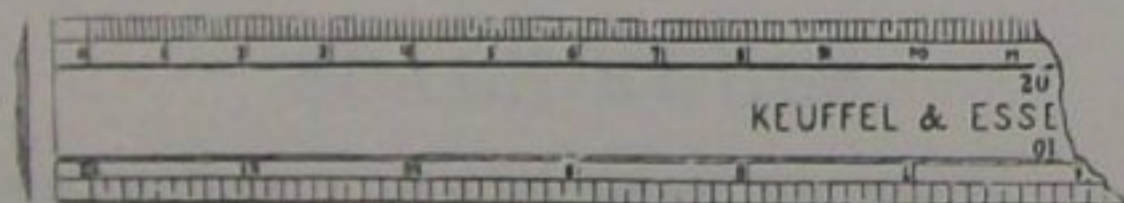
		Ivory	Boxwood
511.	Flat Scale, 6 inch, div. $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 inch to the foot each	\$ 2 25	80
512.	" do. 12 " " $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 " " " " "	4 00	1 25
513.	" do. 12 " " $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 3 " " " " "	4 00	1 25
514.	" do. 12 $\frac{1}{2}$ " " $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 " " " " "		1 50
515 $\frac{1}{2}$ .	" do. 18 " " $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 " " " " "		2 00
516 $\frac{1}{2}$ .	" do. 18 " " $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 3 " " " " "		2 00
515.	" do. 24 " " $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 " " " " "		3 00
516.	" do. 24 " " $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 3 " " " " "		3 00
517.	Detail Scale, 24 inch, div. $\frac{1}{4}$ , 1 to the foot, $\frac{1}{8}$ inch full size . . . . . "		3 00



No. 519.

518.	Flat Scale, 12 inch, beveled on both sides div. $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , $1 \times \frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 3 inch to the foot each	\$	2 00
519.	do. 24 inch, do. do. "		4 00

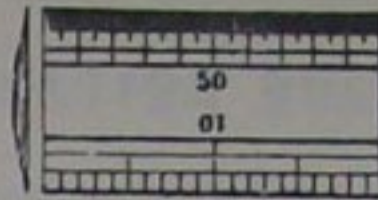
## Chain Scales divided in inches and $\frac{1}{10}$ of an inch.



No. 522.

520.	Flat Chain Scales, 6 inch, div. $10 \times 50$ , $20 \times 40$ or $30 \times 60$ parts per inch, each	\$ 3 00	1 00
521.	Flat Chain Scales, 6 inch, div. $80 \times 100$ parts per inch . . . . . "	4 50	1 75
522.	Flat Chain Scales, 12 inch, div. $10 \times 50$ , $20 \times 40$ or $30 \times 60$ parts per inch "	4 00	1 50
523.	Flat Chain Scales, 12 inch, div. $80 \times 100$ parts per inch . . . . . "	6 00	3 00

No. 524.



- 524. Flat Offset Scale, 2 inch to match 520 and 522 each
- 525. " do. 2 " " " 521 " 523 "

	Ivory	Boxwood
524.	\$ 1 00	60
525.	1 50	1 00

**Chain Scales divided 10 parts to the foot.**

- 526. Flat Chain Scale, 12 inch div.: 100 × 500, 200 × 400 or 300 × 600 parts per foot each
- 527. Flat Chain Scale 12 inch div.: 800 × 1000 parts per foot . . . . . "
- 528. Flat Offset Scale 2 inch to match 526 . . . . . "
- 529. " do. 2 " " " 527 . . . . . "

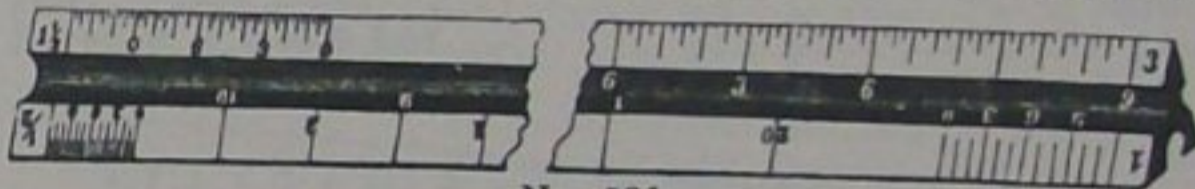
Sets of Scales made to order.

Foreign Scales of any description cut to order.

**RUBBER SCALES SEE PAGE 74.**

Purchaser's Name put on any Scale without charge

**TRIANGULAR BOXWOOD SCALES.**

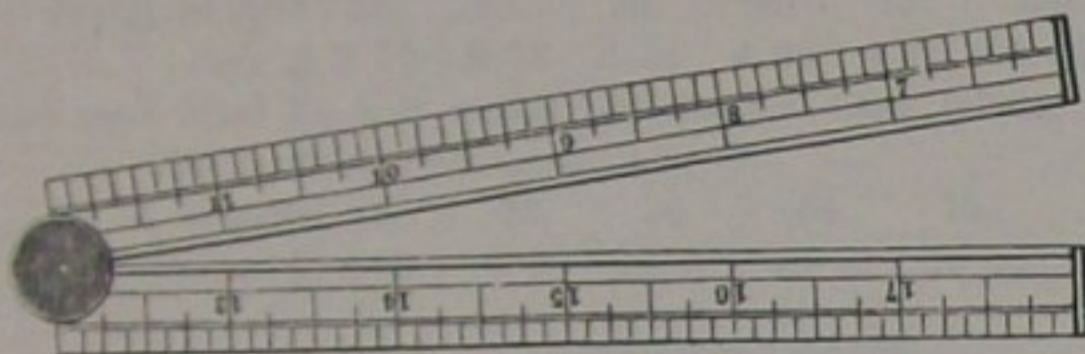


No. 531.

- 530. Triangular Boxwood Scale  
contg. 1 1/2, 1 3/8, 1, 1, 1, 1, 1, 1, 1 1/2, 3 inch Scale, 1/16 inch,  
6 inch . . . . . each \$ 1 50
- 531. 12 " . . . . . " 2 00
- 531 1/2. 18 " . . . . . " 3 00
- 532. 24 " . . . . . " 5 00
- 533. Triangular Boxwood Chain Scale  
div 10, 20, 30, 40, 50, 60 parts per inch,  
6 inch . . . . . " 1 50
- 534. 12 " . . . . . " 2 00
- 534 1/2. 18 " . . . . . " 3 00
- 535. 24 " . . . . . " 5 00
- 536. 12 " div. 20, 30, 40, 50, 60, 80 parts per inch " 2 00
- 537. Triangular Boxwood Chain Scale  
div. 100, 200, 300, 400, 500, 600 parts per foot,  
6 inch . . . . . " 1 50
- 538. 12 " . . . . . " 2 00
- 539. 24 " . . . . . " 5 00
- 540. div. 200, 300, 500, 600, 800, 1000 parts per foot,  
12 inch . . . . . " 2 00
- 541. Triangular Boxwood Offset Scale  
2 inch to match No. 533 to 535 . . . . . " 75

545.	Gunter Scales, 12 inch . . . . .	each	\$	75
546.	" 24 " . . . . .	"		1 00
547.	Boxwood School Rule, 12 inch, $\frac{1}{4}$ and $\frac{1}{16}$ ths inch . . . . .	"		15
548.	" do. 8 " $\frac{1}{4}$ inch . . . . .	"		12
549.	Maple do. 12 " $\frac{1}{4}$ " . . . . .	"		10

## RULES.



No. 551.

550.	Ivory Joint Rule, 1 foot 4 fold, German Silver mounted	each	\$	1 25
551.	" " " 2 " 4 " " " " "			
	$\frac{1}{4}$ inch wide . . . . .	"		4 00
552.	" " " 2 " 4 " German Silver mounted			
	1 inch wide . . . . .	"		5 00
555.	Boxwood Joint Rule, 1 foot 4 fold Brass mounted . . . . .	"		25
556.	" " " 1 " 4 " " " bound . . . . .	"		75
557.	" " " 2 " 4 " " " . . . . .	"		35
558.	" " " 2 " 4 " " " half bound . . . . .	"		1 00
559.	" " " 2 " 4 " " " bound . . . . .	"		1 25
560.	Boxwood Shrinkage Rule, 24 $\frac{1}{2}$ inch single shrinkage . . . . .	"		1 00
	divided: $\frac{1}{10}$ , $\frac{1}{12}$ , $\frac{1}{16}$ , $\frac{1}{32}$ inch			
561.	do. do. best 24 $\frac{1}{2}$ inch do. . . . .	"		2 25
562.	do. do. " 24 $\frac{1}{2}$ " double . . . . .	"		2 50

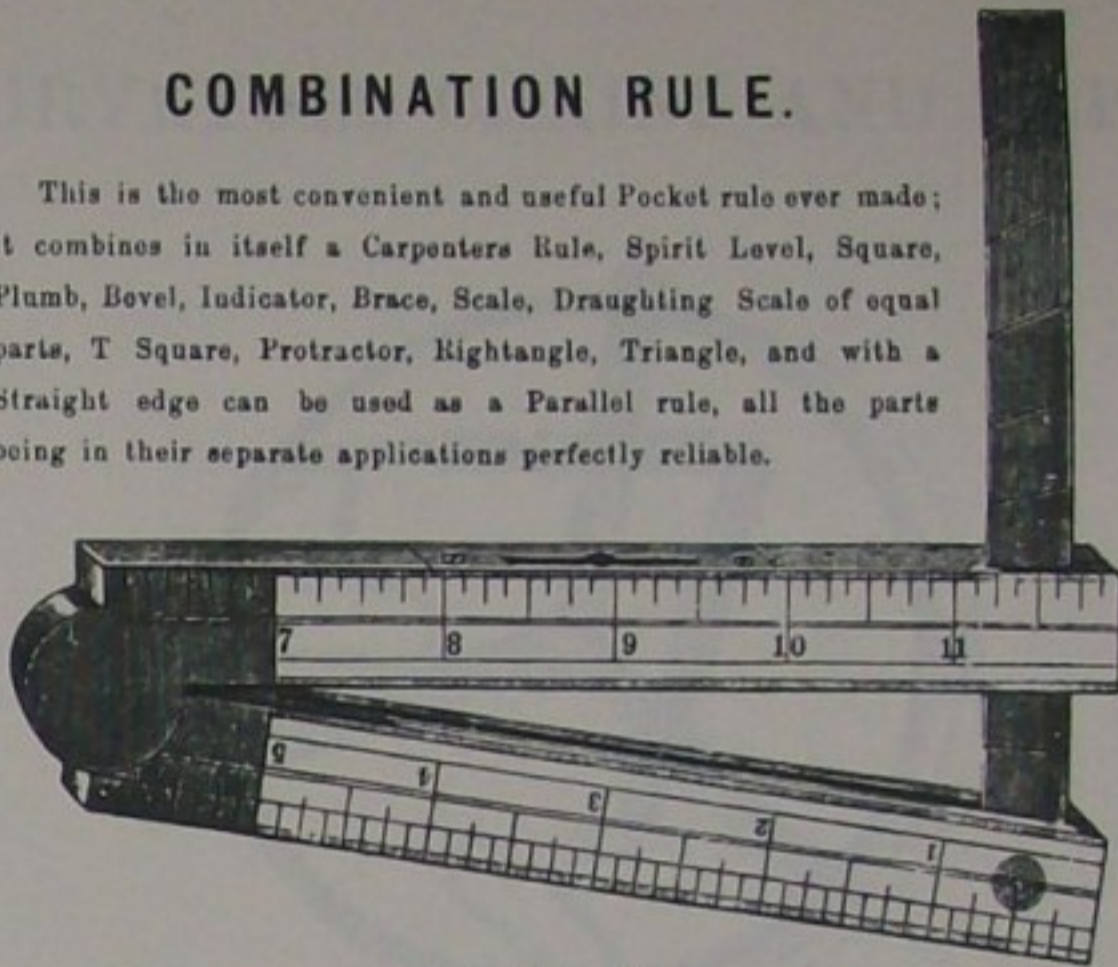
## SCALE RULES.

570.	Ivory Joint Rule, 2 feet 4 fold, German Silver mounted, divided: outside $\frac{1}{4}$ , $\frac{1}{10}$ , $\frac{1}{12}$ , $\frac{1}{16}$ ths of inches, edge foot in 100ths inside on beveled edge Scales of $\frac{1}{16}$ , $\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{1}{2}$ , $1$ , $1\frac{1}{2}$ , $1\frac{1}{4}$ inches to the foot	each	\$	7 50
571.	Boxwood Joint Rule, 2 feet 4 fold, German Silver mounted, divided like No. 570 . . . . .	"		2 75
572.	Boxwood Joint Rule, 2 feet 4 fold, Brass mounted with Scales on beveled edge of $\frac{1}{16}$ , $\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{1}{2}$ , $1$ , $1\frac{1}{4}$ , $1\frac{1}{2}$ inch to the foot. . . . .	"		2 00



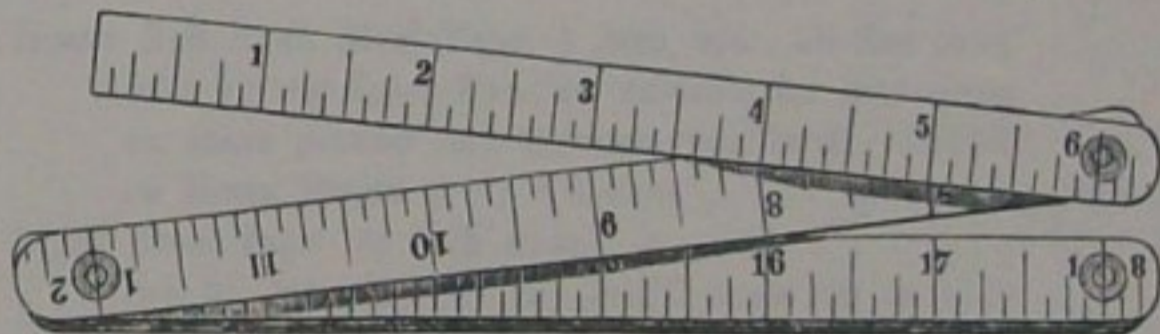
### COMBINATION RULE.

This is the most convenient and useful Pocket rule ever made; it combines in itself a Carpenters Rule, Spirit Level, Square, Plumb, Bevel, Indicator, Brace, Scale, Draughting Scale of equal parts, T Square, Protractor, Rightangle, Triangle, and with a Straight edge can be used as a Parallel rule, all the parts being in their separate applications perfectly reliable.



No. 590, 591.

- |      |                                  |      |         |
|------|----------------------------------|------|---------|
| 590. | Ivory, 1 foot 2 fold . . . . .   | each | \$ 8 00 |
| 591. | Boxwood, 1 foot 2 fold . . . . . | "    | 3 50    |



No. 592.

- |      |  |      |       |
|------|--|------|-------|
| 592. | Engineer's Boxwood Pocket Rule, 4 feet 8 fold div. $\frac{1}{8}$ x $\frac{1}{8}$ inch, | each | \$ 75 |
| 593. | " " " " 4 " 8 " " $\frac{1}{8}$ x Meter,   | "    | 75    |

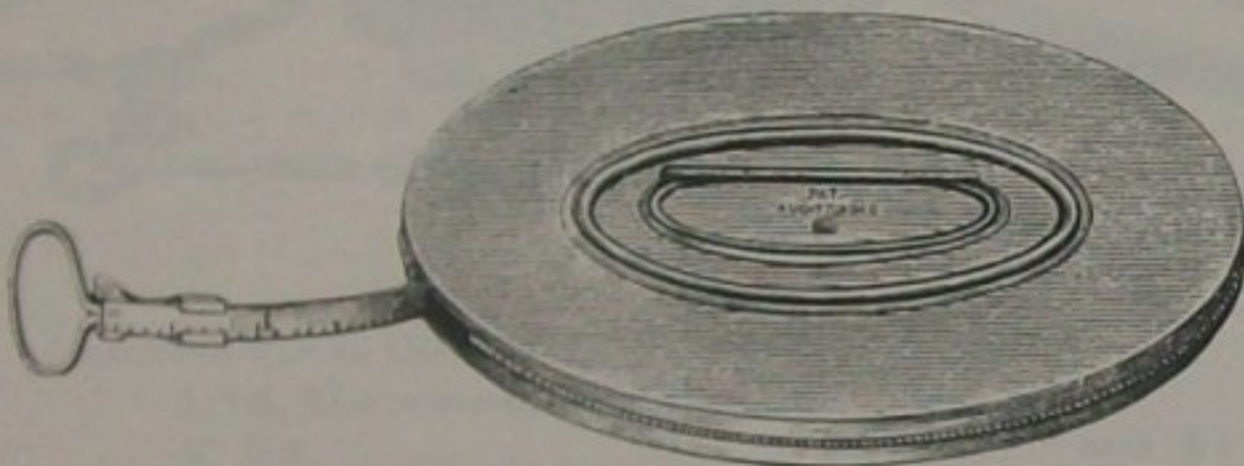
### TAPE MEASURES.



No. 600

- |      |  |          |      |      |      |      |
|------|--|----------|------|------|------|------|
| 600. | Best Tape of corded linen, in strong Leather Case, |          |      |      |      |      |
|      | div. $\frac{1}{8}$ or $\frac{1}{2}$ ths            | 33.      | 40.  | 50.  | 66.  | 75.  |
|      |  | 100 feet |      |      |      |      |
|      | each \$  | 80       | 1 00 | 1 25 | 1 50 | 1 60 |
|      |  |          |      |      |      | 1 75 |

606. London Tape, in strong black Leather Case, folding handle,  
Tape of best corded Linen, warranted to be stronger and more  
durable than any other Tape,  
div.  $\frac{1}{8}$  or  $\frac{1}{2}$ <sup>ths</sup> 50. 66. 75. 100 feet  
each \$ 4 50 5 25 6 00 8 00
607. Linen Tapes only, like No. 606,  
div.  $\frac{1}{8}$ <sup>ths</sup> or  $\frac{1}{2}$ <sup>ths</sup> 50. 66. 75. 100 feet  
each \$ 2 25 2 60 3 00 4 00
611. Chesterman's Metallic Tape, in strong bent Leather Case  
div.  $\frac{1}{8}$  or  $\frac{1}{2}$ <sup>ths</sup> 25. 33. 50. 66. 75. 100 feet  
each \$ 2 50 2 75 3 50 4 00 4 50 5 50
617. Chesterman's Steel Tape, in strong bent Leather Case, folding handle,  
the most accurate measure  
div.  $\frac{1}{8}$  or  $\frac{1}{2}$ <sup>ths</sup> 25. 33. 50. 66. 75. 100 feet  
each \$ 6 00 7 00 10 00 13 00 15 00 19 00



No. 620.

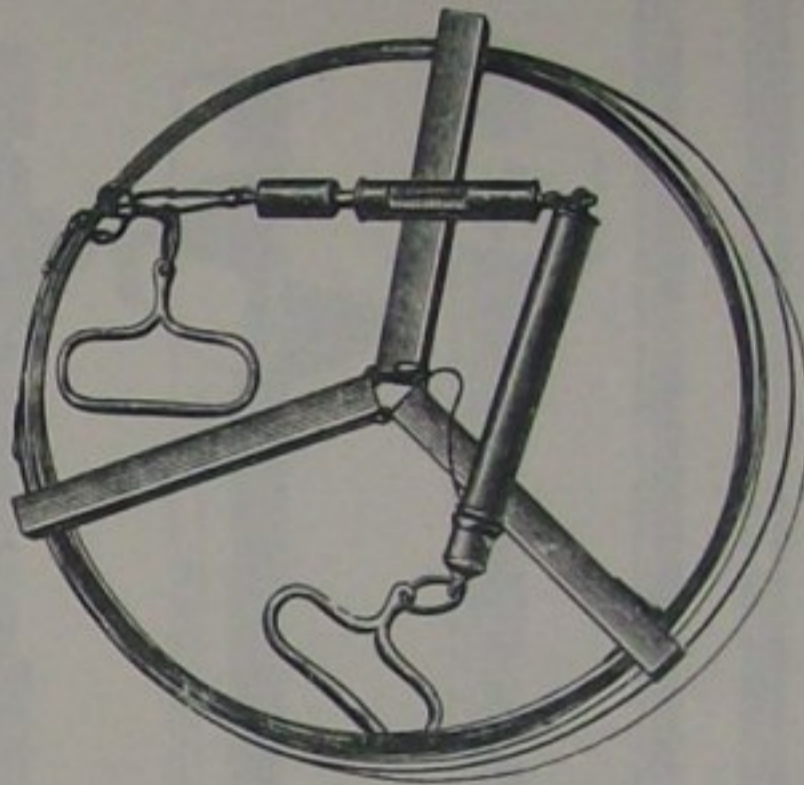
619. Paine's Patent Standard Steel Tapes, in japanned Cases,  
div.  $\frac{1}{8}$  or  $\frac{1}{2}$ <sup>ths</sup> 25. 50. 66. 75. 100 feet  
each \$ 3 50 6 00 8 00 10 00 12 00
620. Paine's Patent Standard Steel Tapes, in leather Cases with Flush Handle,  
div.  $\frac{1}{8}$  or  $\frac{1}{2}$ <sup>ths</sup> 50. 66. 75. 100 feet  
each \$ 8 00 10 00 12 00 15 00
621. Detachable Compensatory Handles, graduated for  
variations of temperature . . . . . per pair \$ 3 00

No. 624.



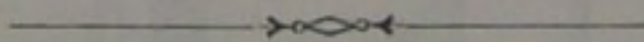
623. Chesterman's Pocket Linen Tape,  
in German Silver Case with Spring and Stop 3. 4. 5. 6 feet  
each \$ 1 50 1 60 1 75 2 00
624. Chesterman's Pocket Steel Tape,  
in German Silver Case with Spring and Stop  
3. 5. 6. 9. feet  
each \$ 2 00 2 50 2 75 4 00

# SURVEYORS CHAINS AND TAPES.



No. 650.

- |      |  |               |
|------|--|---------------|
| 645. | Heavy Rail Road Steel Tape, $\frac{1}{2}$ inch wide, 50 feet long, with strong Brass Handles, suitable for measuring on stone ground and through woodlands, divided on Brass Rivets every 6 inches . . . . .                                   | each \$ 16 00 |
| 648. | Light Steel Tape, $\frac{3}{16}$ inch wide, can be furnished at any length from 50 to 1000 feet without joints,<br>100 feet Standard with 1 Pair of Handles, to wind up on a reel . . . . .  | " 6 50        |
|      | Every additional 100 feet . . . . .  | " 5 50        |
| 650. | Fine Steel Tape, 50 feet long, Tape $\frac{3}{16}$ inch wide with Spring Balance, Spirit Level, Thermometer and Brass Handles. For very accurate measurement. Largely used on valuable grounds in the Citis of New York and Brooklyn . . . . . | " 20 00       |



# SURVEYOR'S CHAINS.



No. 657.

651.	Grumman's Patent Chain W. G. 18, with Spring, Spirit Level, Thermometer, Brass Handles, weight $\frac{1}{2}$ lb., 50 feet . . . . .	each	\$ 17 00
652.	Land Chain, Iron, W. G. 8, bright Brass Handle, 50 feet	"	3 50
653.	" " " " 8, " " " 100 "	"	5 50
654.	" " Steel " 11, jap <sup>d</sup> " " 50 "	"	7 00
654-1.	" " " " 11, " " " 100 "	"	9 00
654-2.	" " " " 11, " " " 100 "		
		brazed links	" 14 00
654-3.	" " " " 11, " " " 50 feet		
		brazed links	" 9 00
656.	" " Iron, " 8, bright " " 33 feet	"	2 50
657.	" " " " 8, " " " 66 "	"	4 00
659.	" " Steel " 13, jap <sup>d</sup> " " 66 "	"	7 00

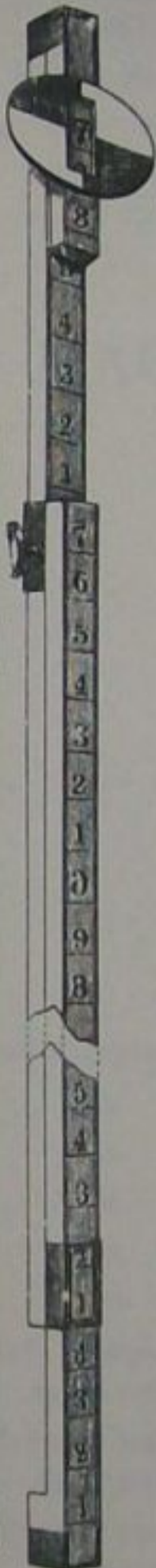
# ARROWS.

660.	Iron Arrows, W. G. 9, bright, 11 in set . . . . .	set	\$ 1 00
661.	Steel " " 9, " 11 " " . . . . .	"	1 50
662.	" " " 11, " 11 " " . . . . .	"	1 25

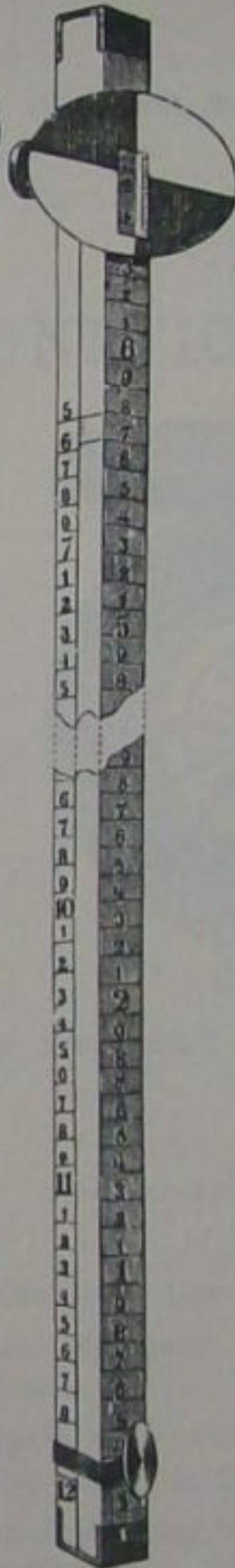




No. 663.



664.



665.



666.



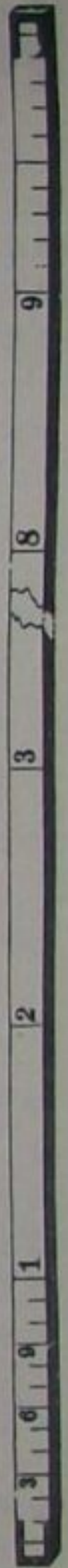
690.



693.



694.



696.

## RAIL ROAD LEVELING ROD.

663. English selfreading Rod,  
Mahogany, 5 feet long, slides out to 14 feet . . . each \$ 25 00
664. Philadelphia Rod,  
made of seasoned Mahogany, with Vernier Clamp  
and Target, 7 feet, slides out to 12 feet . . . " 18 00
665. New York Rod,  
made of Satinwood, with improved clamp and  
target, machine divided to 10<sup>ths</sup> and 100<sup>ths</sup> of a  
foot, slides out to 12 feet . . . . . " 16 00
666. Boston Rod,  
made of Mahogany, 6 feet 6 inches long, machine  
divided on Satinwood, with vernier at each end,  
slides out to 11 feet . . . . . " 16 00

## LEVELING POLES, STANDARD MEASURES.

690. Leveling Pole of best seasoned wood, square, octagonal or circular in  
cross section; painted red and white alternately every foot  
5, 6, 8, 10 feet  
each \$ 3 20 3 60 4 00 4 40.
693. do. do. square in cross section cheekered red and white every foot  
5, 6, 8, 10 feet  
each \$ 3 40 3 80 4 30 4 75
694. Keuffel & Esser's Measuring Rods; two in a set, each  
10 feet long, octagonal, of best seasoned wood,  
1½ inch diameter; beveled steel ends with bubble  
on one end, painted red and white . . . . . per Pair \$ 25 00
695. do. do. each 20 feet long, made of jointed  
10 foot poles and strengthened by metal tubes  
at the joints . . . . . " " 50 00
- These poles will be found of great advantage for measuring level as well as hilly ground,  
and are especially recommended for use on valuable land on account of their absolute accuracy.
696. U. St. St<sup>d</sup>. Measures made of seasoned Pine, lined with  
hardwood, brass bound at the ends; 10 feet 3 inches  
long, divided into 10 feet, the first foot in 1/8 and 1/16,  
the last in inches and 1/4 of an inch . . . . . each \$ 10 00
697. do. do. of iron 1×1 inch, 5 feet 3 inches  
long, divided as No. 696 . . . . . " 15 00  
in wooden Case . . . . .
698. do. do. of iron 10 feet 3 inches long, divided  
as No. 696 in wooden Case . . . . . " 30 00

These Standard Measures are indispensable to Rail Road Engineers, Surveyors, Machinists,  
Builders etc. for testing Chains, Tapes, Rules etc. They are made corresponding to the U. St.  
Standard Measures in the Coast Survey at Washington.



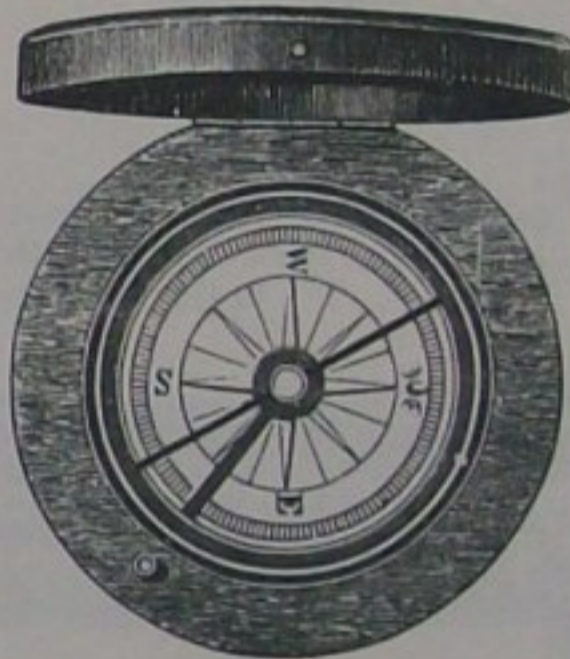
No. 667.



No. 668.

667.	Iron Plumb Bob . . . . .	each \$	75
668.	Brass " " steel point, screw cap . . . . .	"	2 00
669.	" " " " " " " " medium . . . . .	"	2 25
669-1.	" " " " " " " " large . . . . .	"	2 50

## MAGNETIC COMPASSES.



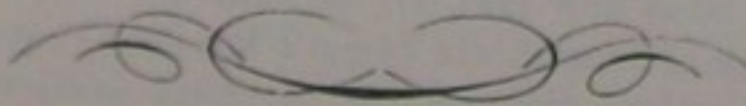
No. 675.

670.	Pocket Compass, Brass round, 1 inch . . . . .	each \$	50
671.	" do. " " 1 1/4 " . . . . .	"	75
672.	" do. " " 1 1/4 " with stop . . . . .	"	1 00
673.	" do. " with cover 1 1/4 " " " . . . . .	"	1 25
674.	" do. " " " 1 1/4 " " " agate centre . . . . .	"	1 75
675.	" do. Mahogany Case 2 " " " . . . . .	"	2 00
676.	Pocket Compass, Mahogany Case, 2 inch, with stop agate centre . . . . .	"	3 00
677.	Geological Compass, of German Silver, with pendulum, for ascertaining angles, in Case . . . . .	"	8 00
677-1.	Miners Compass (Dipping Needle), 3 1/4 inch diameter, for searching iron ore, in Case . . . . .	"	10 00
678.	Prismatic Compass, 3 inch diameter, with floating metal dial, in Case . . . . .	"	20 00

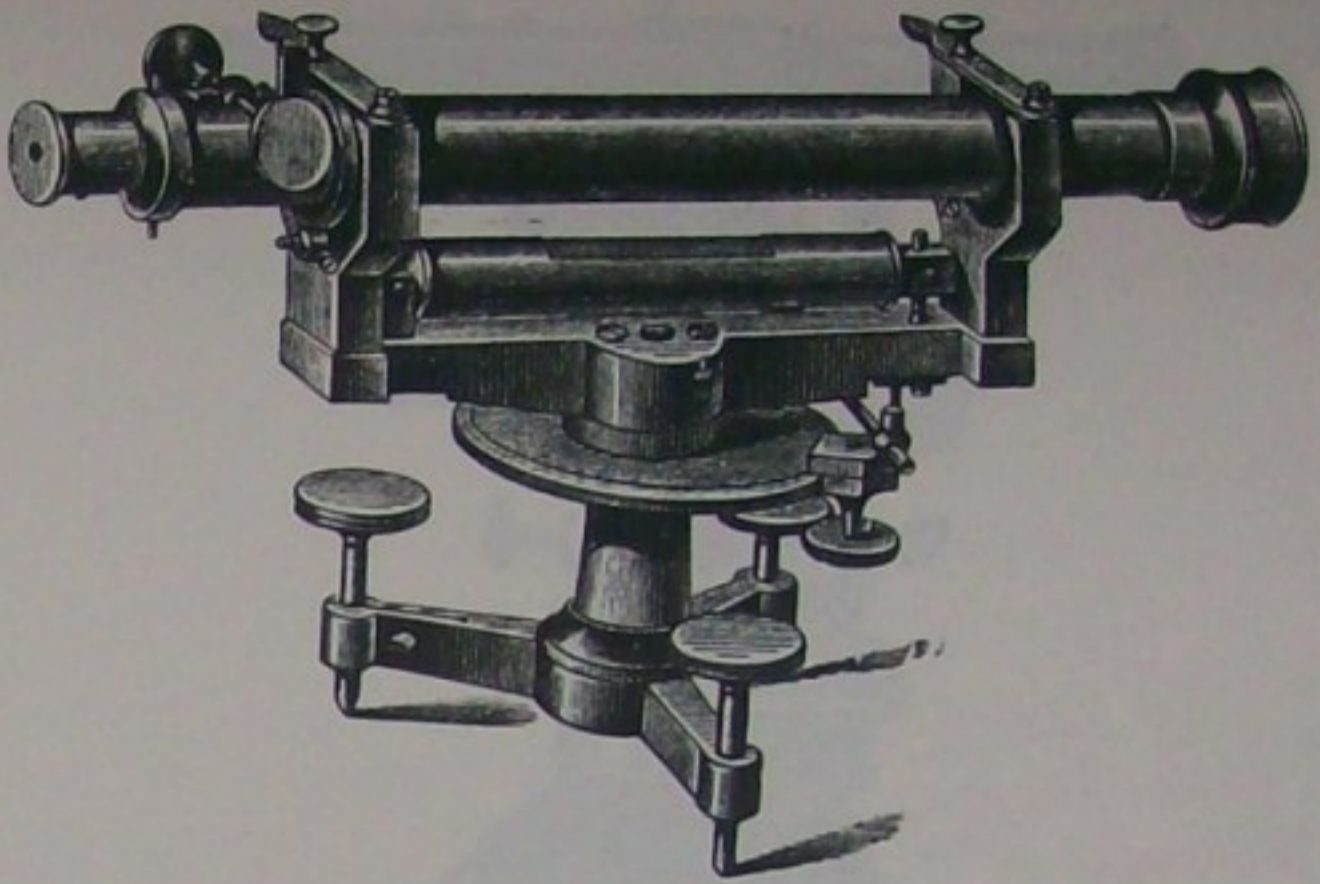


No. 680.

679.	Surveying Compass with folding sights,	2½ inch,	in Case	each	\$ 7 00	
679-1.	do.	do.	" " " 3½ "	"	7 50	
679-2.	do.	do.	" " " 4 "	"	9 00	
680.	Surveying Compass with folding sights,	with Ball Joint	and Socket for Jacob Staff,	4 inch,	in Case	" 13 50
680-1.	do.	do.	" " " 4½ "	"	14 00	
680-2.	do.	do.	" " " 4½ "	"	15 00	
680-3.	do.	do.	" " " 5½ "	"	16 00	
	Tripods for Nos. 680, 680-1, 680-2, 680-3 . . . . .				" 3 00	
	Jacob Staffs . . . . .				" 1 00	
680-4.	do.	do.	with Jacob Staff Mountings,	6 inch needle, on Tripod . . . . .	" 50 00	
681.	Locke's Hand Level, Brass . . . . .			"	10 00	
681-1.	do.	do.	German Silver . . . . .	"	12 00	
682.	Builders Level, Telescope 13 inch long, with inverting glasses,	on Jacob Staff Tripod . . . . .		"	33 00	

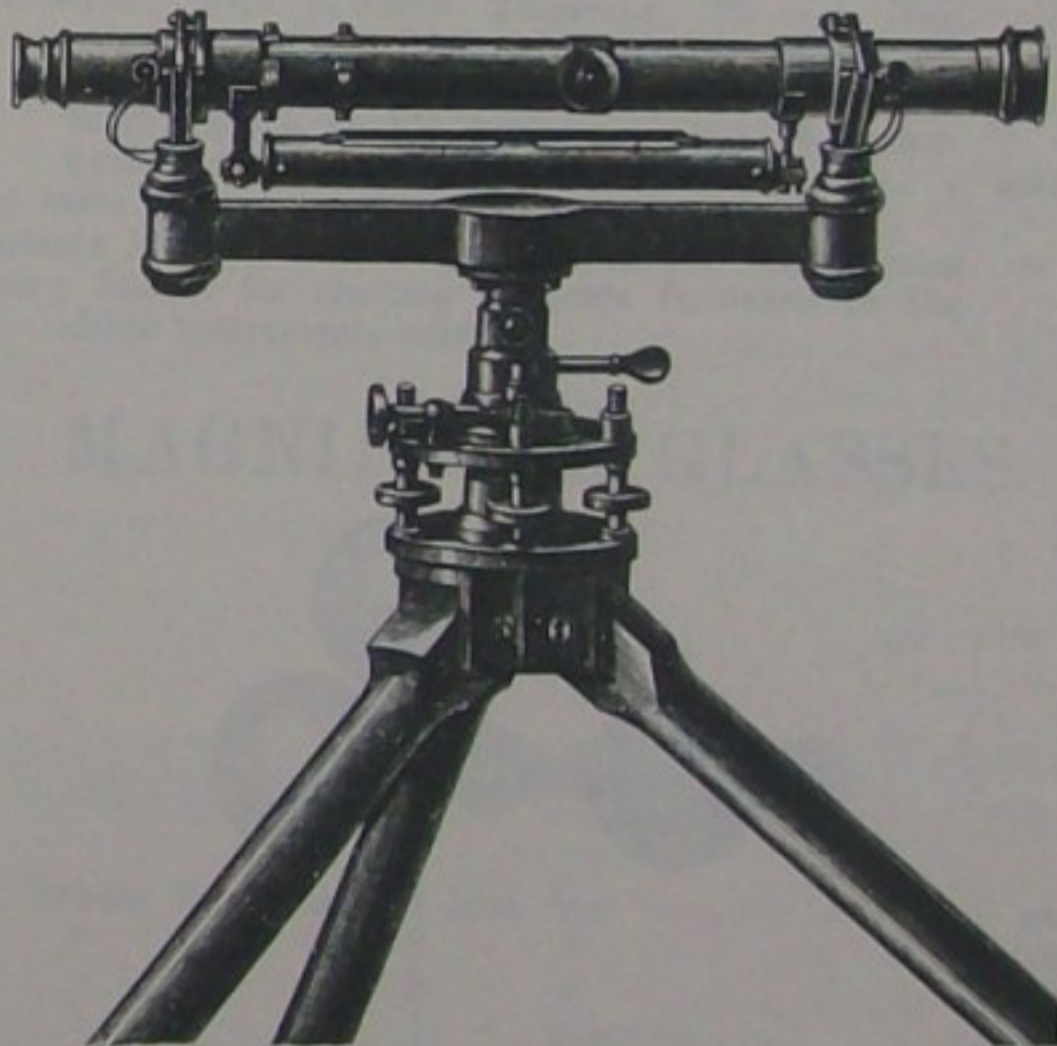






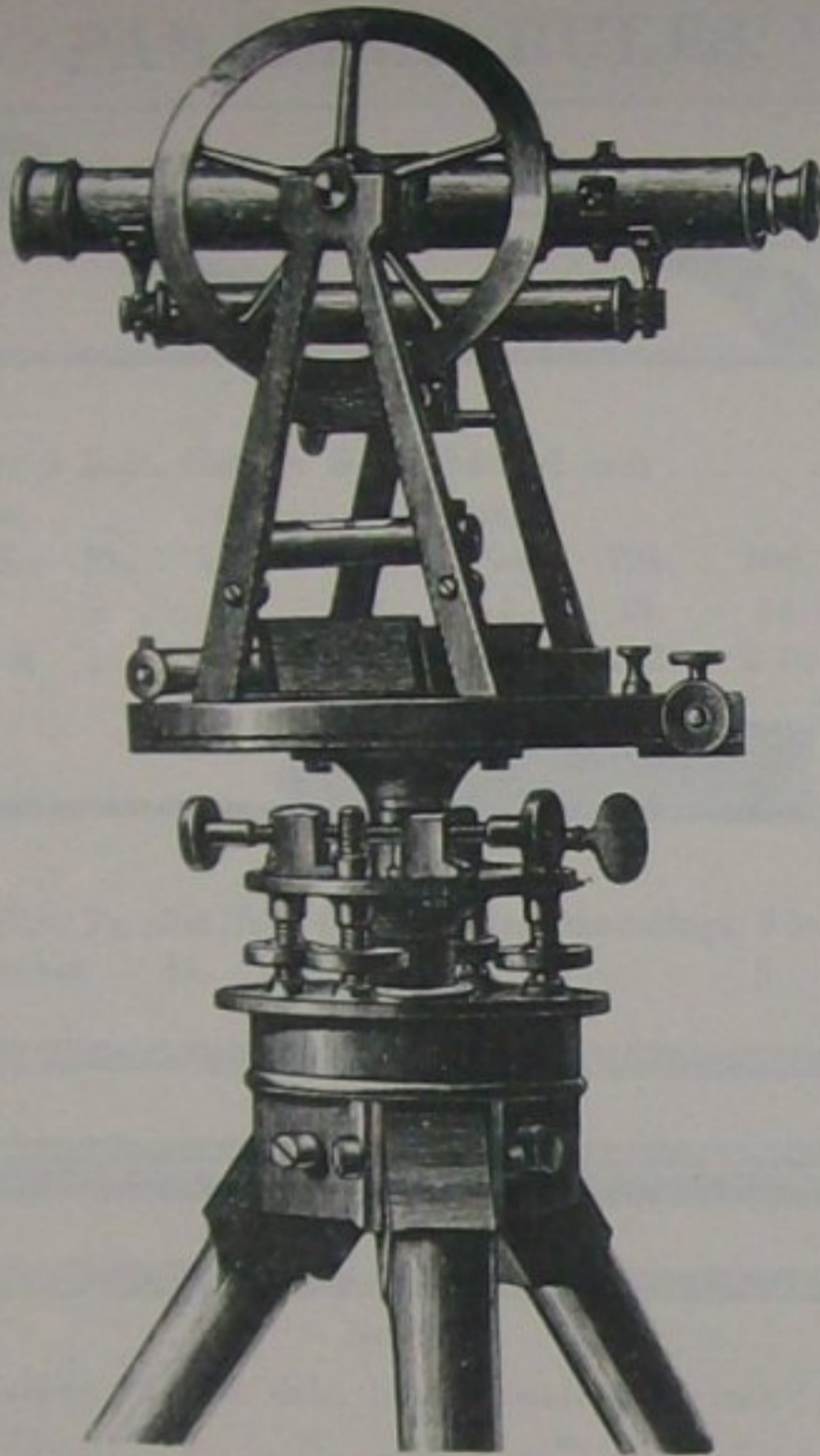
No. 683.

683. Dumpy Level, Telescope 13½ inch long, inverting glasses.  
 Eye-piece with tangent screw adjustment, three  
 adjusting screws on Tripod . . . . . each \$ 75 00



No. 684.

684. Y Level, Telescope 18-20 inch long, magnifying power  
 22 times, best make, guaranteed . . . . . each \$ 140 00



No. 687.

685. Plain Engineers Transit, like 687, Telescope, 11 to 12 inch long, magnifying power 18 times, needle  $4\frac{1}{4}$  inch, horizontal limb 6 inch diam., divided to 20 minutes, with double vernier reading to 30 seconds.

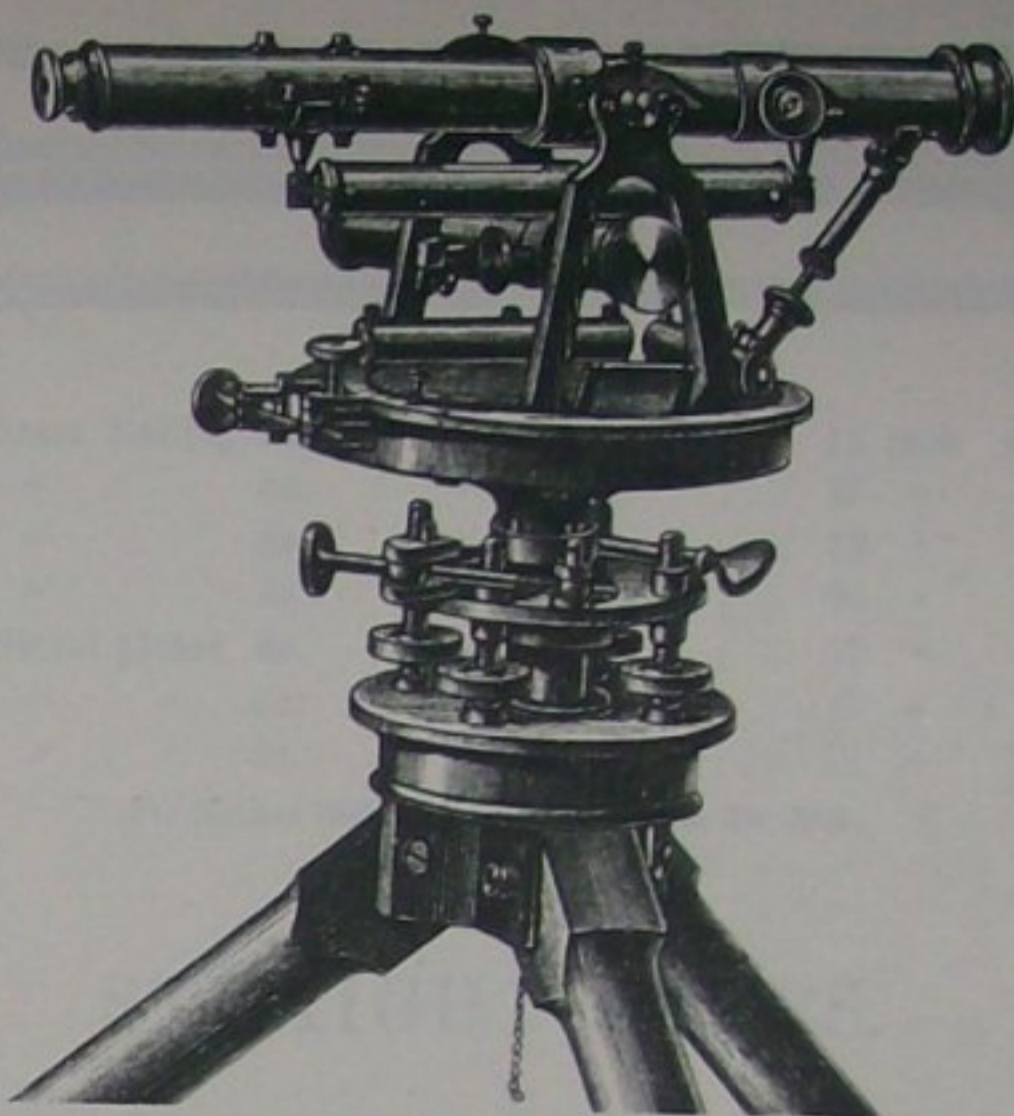
Best workmanship guaranteed . . . . . each \$ 200 00

686. Engineers Transit, the same as No. 685, with Level to Telescope. Clamp and Tangent attachment to axis.

Best workmanship guaranteed . . . . . " 225 00

687. Engineers Transit, the same as No. 685, with Level to Telescope Clamp and Tangent attachment to axis, with vertical Limb, 5 inch diameter reading to 1 minute. Best workmanship guaranteed . . . . . " 250 00

Nos. 685, 686, 687 will be made with Theodolite axis, if required without additional charge.



No. 689.

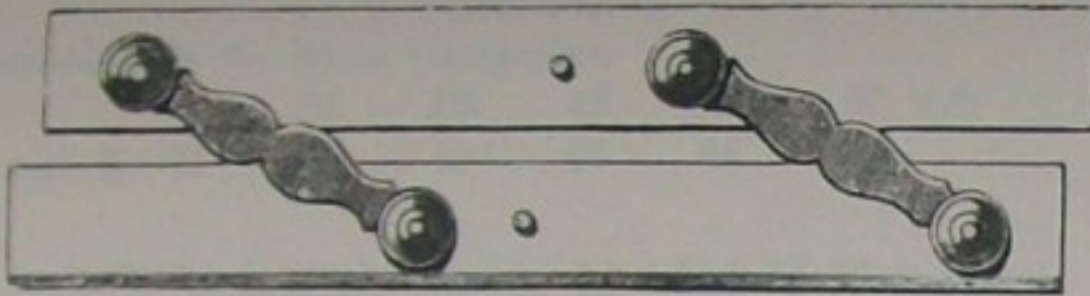
688. Theodolite, with powerful Telescope, 12 inch long, magnifying power 20 to 22 times, needle 4 1/4 inch, horizontal Limb 7 inch diam., divided on fine silver to 20 minutes, double vernier reading to 20 seconds. Best Workmanship guaranteed . . . . . each \$ 275 00
689. The same with right angle Telescope . . . . . " 325 00
- Instruments No. 685 to No. 689 with shifting centre, extra " 10 00
- Reflecting Shades for minning purposes furnished to the above instruments extra . . . . . " 8 00

## MAGNIFYING GLASSES.



Pocket, Rubber Rim folding 1 lens, fine . . . . .	each	\$	75
do. " " " 2 " " . . . . .	"		1 20
do. " " " 3 " " . . . . .	"		1 50
do. " " " 1 " common . . . . .	"		60
do. " " " 2 " " . . . . .	"		1 00
Reading Glasses, German Silver rim, wooden Handle			
1 1/4. 2. 2 1/4. 3. 3 1/4. 4 inch			
each \$			75 1 00 1 75 2 50 3 00 3 50

# PARALLEL RULES.



No. 700.

700. Ivory Parallel Rule, German Silver bars, 6 inch . . . . . each \$ 1 50

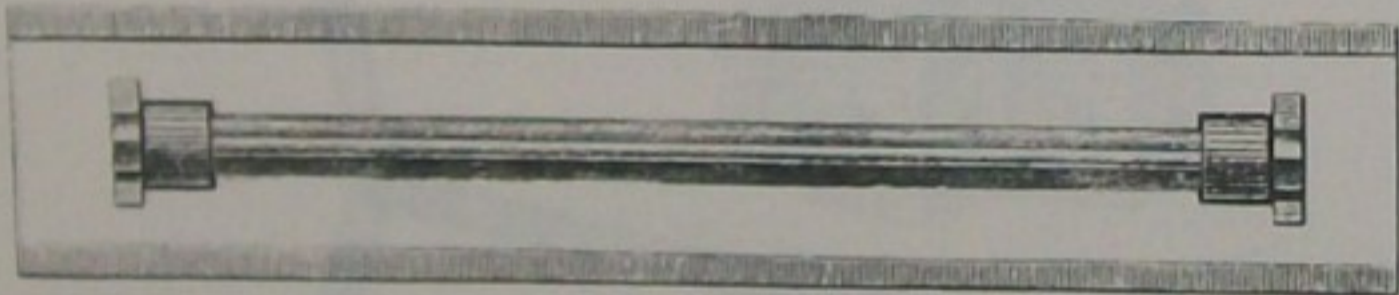
701. Ebony do.	Brass	bars,				
	No. 701.	702.	703.	704.	705.	706.
	6.	9.	12.	15.	18.	24 inch
each \$	25	50	75	1 00	1 25	2 00



No. 707.

707. Ebony Rolling Parallel Rule, German Silver mountings, 9 inch, each \$ 4 00

708. German Silver do. 9 " " 4 75



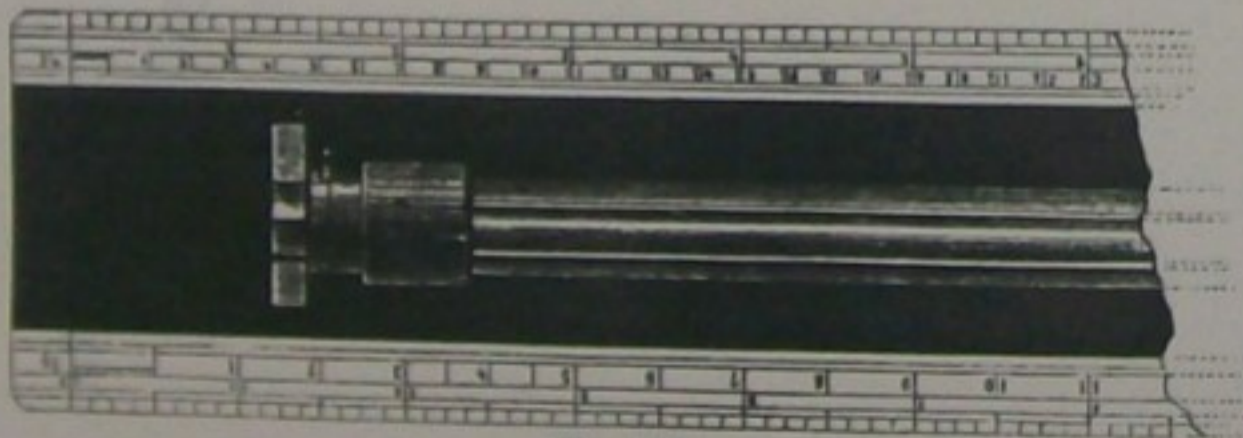
No. 709.

709. Ebony Rolling Parallel Rule, Brass mountings, 9 inch . . . each \$ 2 75

710. " do. " " " " 12 " . . . " 3 25

711. " do. " " " " 15 " . . . " 4 00

712. " do. " " " " 18 " . . . " 5 00

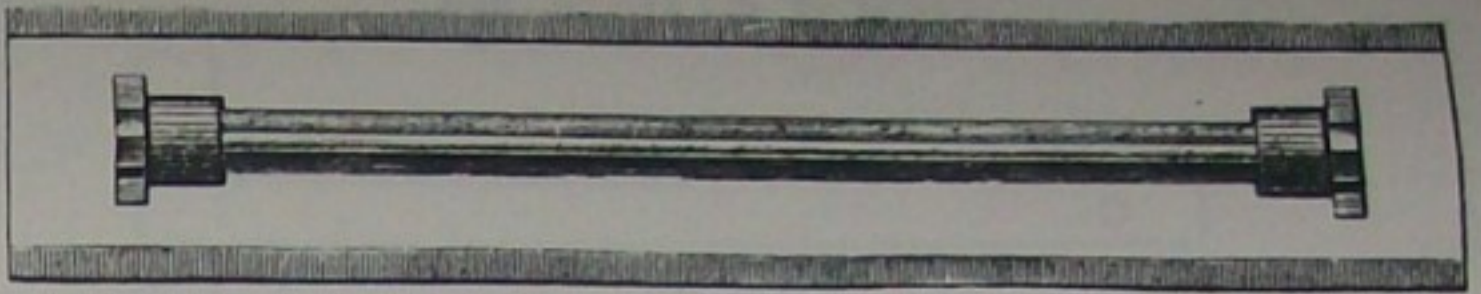


No. 713.

713. Ebony Rolling Parallel Rule, Brass mountings,  
divided Ivory edges . . . . . 12 inch each \$ 5 00

713-1. do. do. . . . . 15 " " 6 50

714. do. do. . . . . 18 " " 7 50

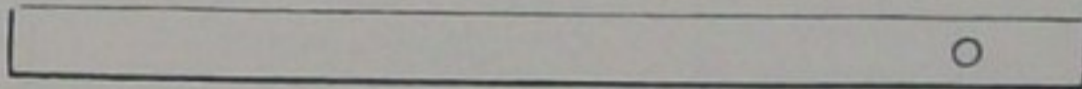


No. 715.

715.	Solid Brass Rolling Parallel Rule, in Case	. .	12 inch	each	\$ 8 50
716.	" " do.	" " "	15 "	"	10 00
717.	" " do.	" " "	18 "	"	12 00
718.	" " do.	" " "	24 "	"	18 00
719.	Brass Nickel plated do.	" " "	12 "	"	10 00
719-1.	" " " do.	" " "	15 "	"	12 00
720.	" " " do.	" " "	18 "	"	15 00

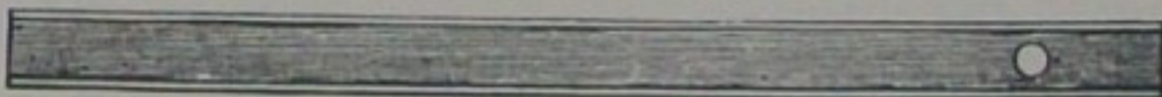
For Rubber Rolling Parallel Rules see No. 1073.

## STRAIGHT EDGES.



No. 731.

731.	Hardwood, beveled edge, thick,							
		12.	15.	18.	24.	30.	36.	42 inch
	each \$	15	15	20	25	30	40	50



No. 732.

732.	Hardwood lined, square edges, thin:								
		24.	30.	36.	42.	48.	54.	60.	72 inch
	each \$	40	50	70	85	1 15	1 50	2 00	3 00



No. 738.

738.	Mahogany, Ebony lined, square edges, thin:								
		24.	30.	36.	42.	48.	54 inch		
	each \$	55	70	1 00	1 25	1 60	2 00		
742.	Steel, with square edges, or one edge beveled the other square, nickel plated,								
		18.	24.	30.	36.	42.	48.	60.	72 inch
	each \$	1 75	3 00	4 00	5 00	6 00	8 00	10 50	14 00

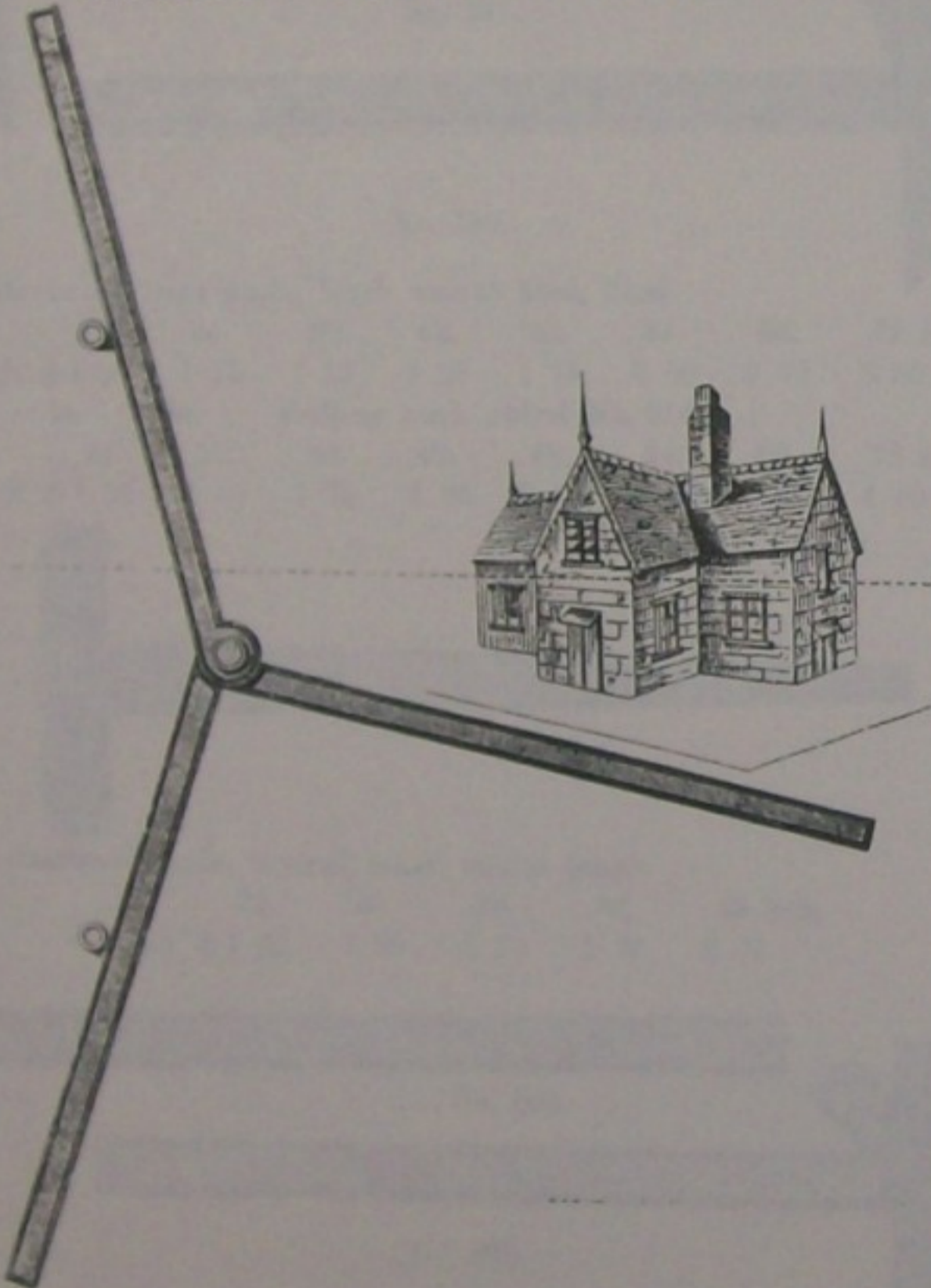


No. 750.

750. Hardwood Bars for Beam Compasses,

	24.	30.	36.	42.	48.	60 inch
each \$	35	40	45	55	65	75

## PERSPECTIVE LINEAD.



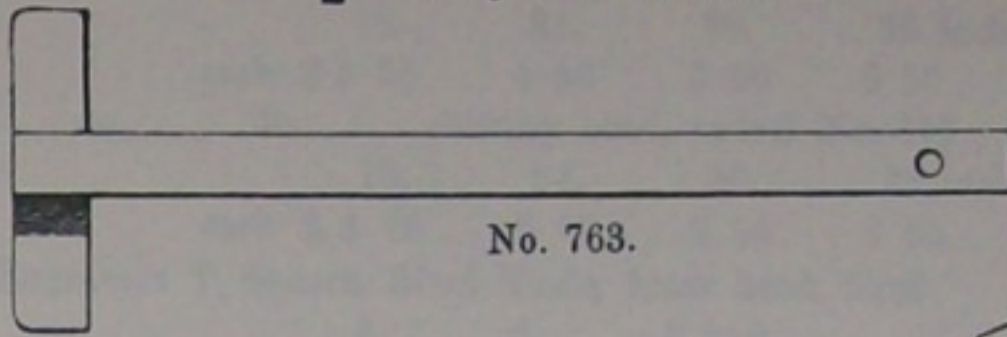
No. 762.

760.	Maple or Mahogany, hard wood lined, 18 inch	pair	\$ 4 00
761.	do. " " " 24 "	"	5 00
762.	do. " " " 36 "	"	6 50

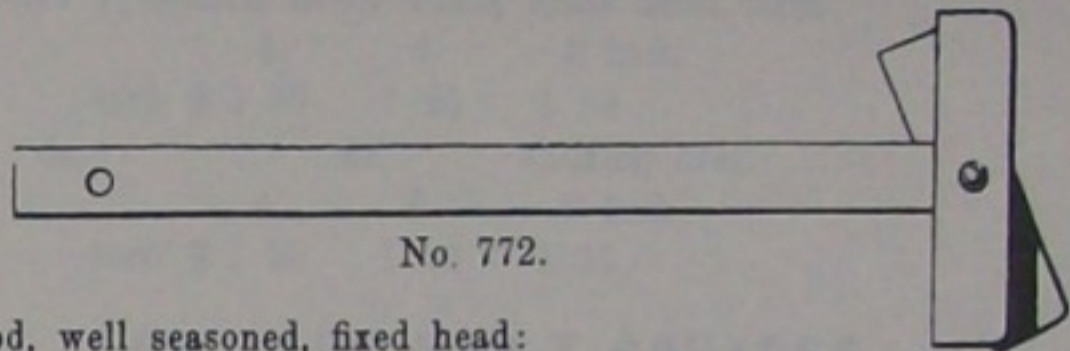
This Perspective Linead is the most simple and perfect instrument of this kind.

Printed directions furnished with each pair.

# T SQUARES.



No. 763.



No. 772.

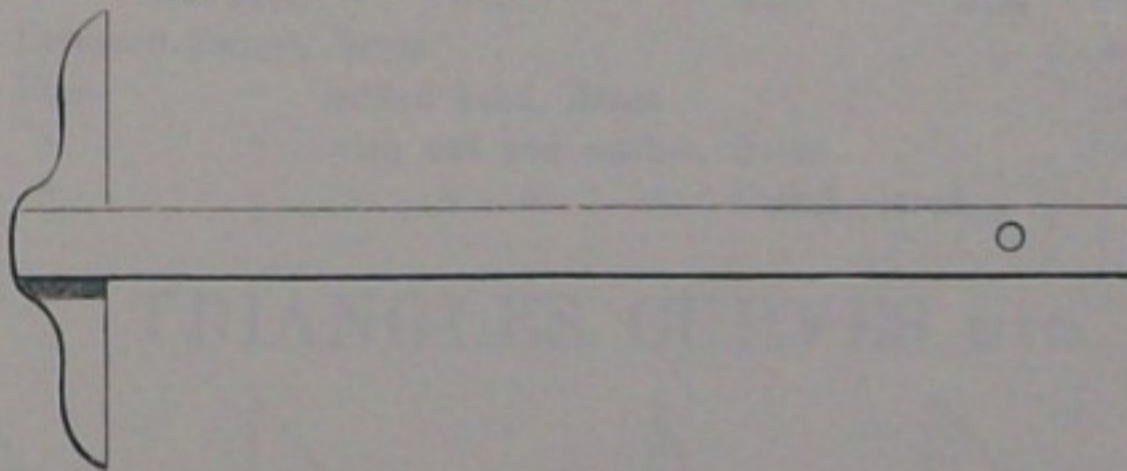
763. Hardwood, well seasoned, fixed head:

	15.	18.	21.	24.	30.	36.	42	inch
each \$	35	40	45	50	60	70	80	

772. do. do. shifting head, swivel No. 810:

	15.	18.	21.	24.	30.	36.	42	inch
each \$	80	90	1 00	1 10	1 20	1 35	1 50	

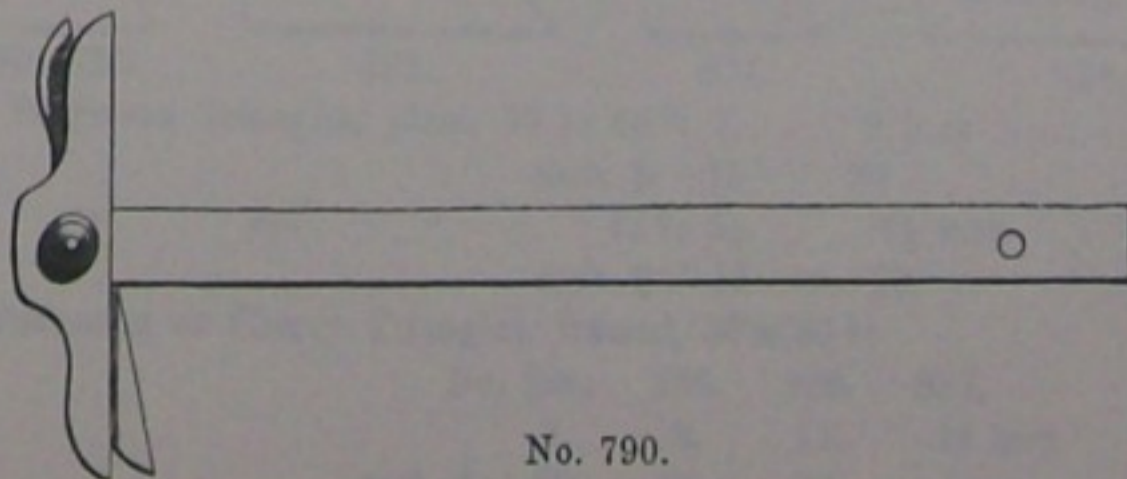
No. 772. with Swivel No. 814 . . . . . extra each \$ 25



No. 781.

781. Maple Blade, black walnut head, fixed:

	18.	21.	24.	30.	36.	42.	48.	54	inch
each \$	65	75	85	1 00	1 10	1 25	1 40	1 60	

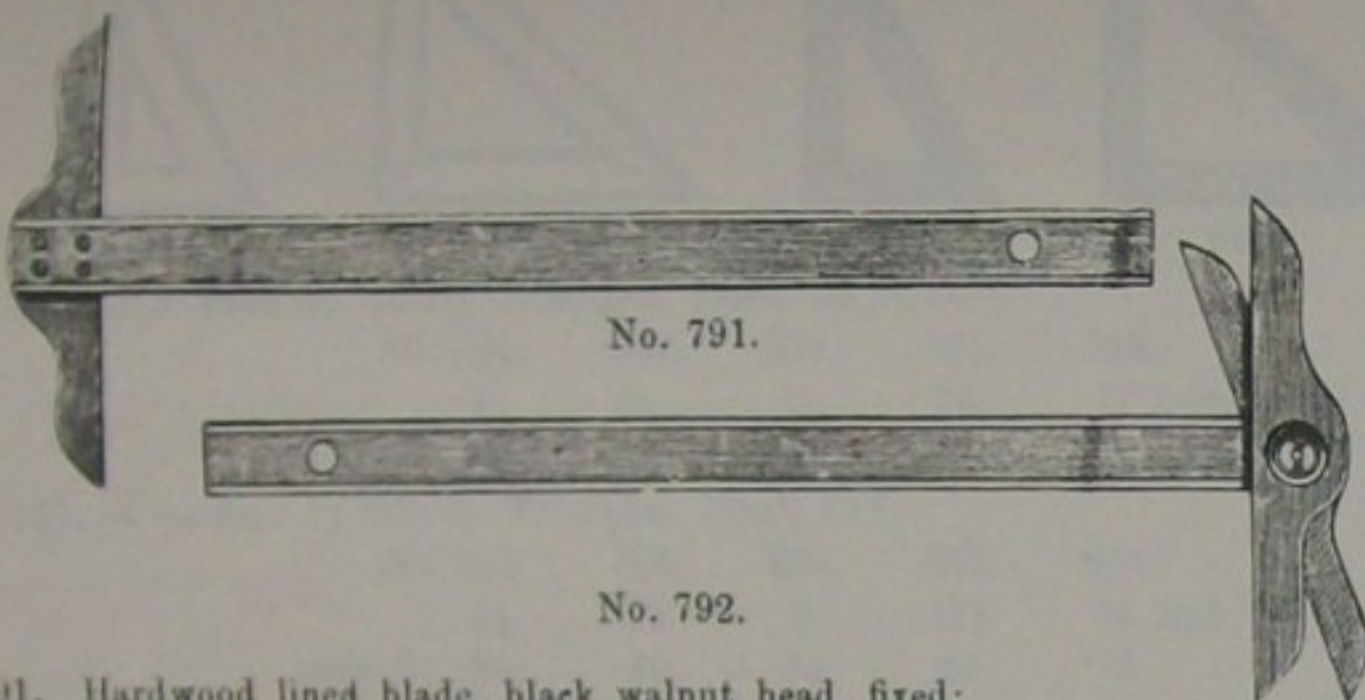


No. 790.

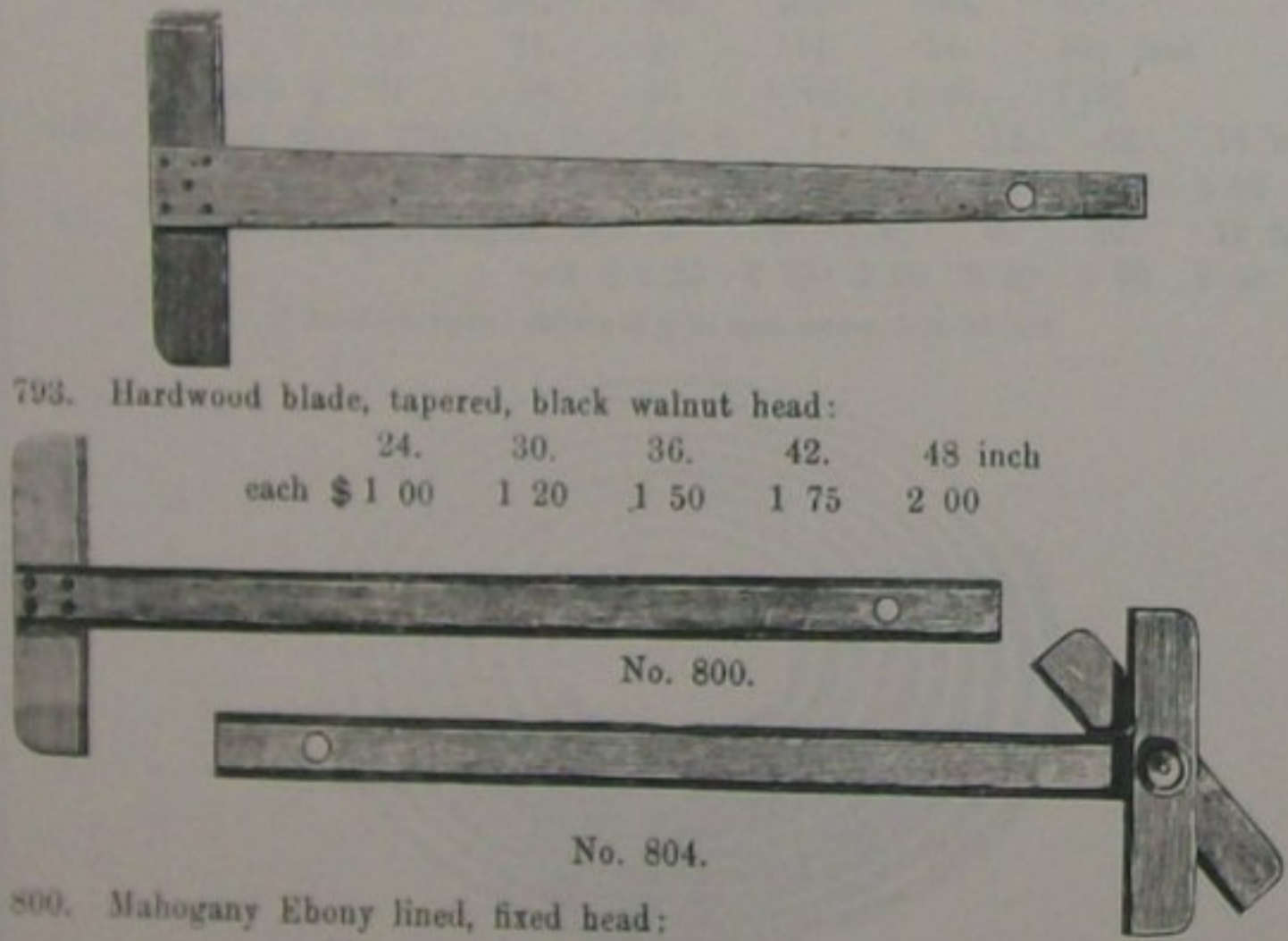
790. Maple Blade, black walnut head, shifting, swivel No. 810:

	18.	21.	24.	30.	36.	42.	48.	54	inch
each \$	1 00	1 15	1 25	1 40	1 50	1 60	1 75	2 00	

790. with swivel No. 811 . . . . . extra each \$ 20  
 790. " " No. 812 . . . . . " " 60



791. Hardwood lined blade, black walnut head, fixed:  
 24. 30. 36. 42. 48. 54. 60. 72 inch  
 each \$ 1 00 1 15 1 25 1 50 1 75 2 00 2 50 3 50  
 792. do. do. shifting head, swivel No. 814:  
 24. 30. 36. 42. 48. 54. 60. 72 inch  
 each \$ 1 50 1 60 1 75 2 00 2 25 2 50 3 00 4 00

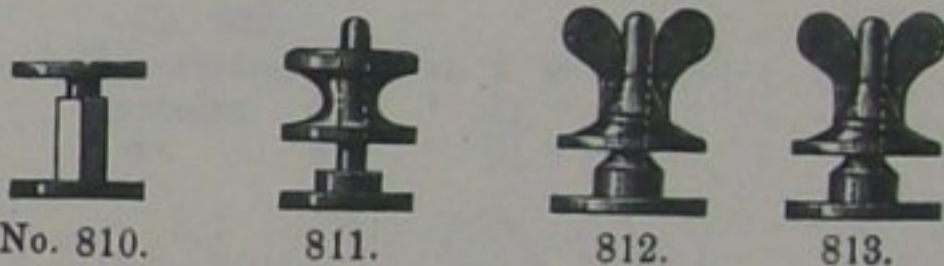


793. Hardwood blade, tapered, black walnut head:  
 24. 30. 36. 42. 48 inch  
 each \$ 1 00 1 20 1 50 1 75 2 00  
 800. Mahogany Ebony lined, fixed head:  
 24. 30. 36. 42. 48. 54 inch  
 each \$ 1 20 1 50 1 75 2 00 2 50 3 25  
 804. Mahogany Ebony lined, shifting head swivel 812:  
 24. 30. 36. 42. 48. 54 inch  
 each \$ 2 20 2 50 2 75 3 00 3 50 4 25



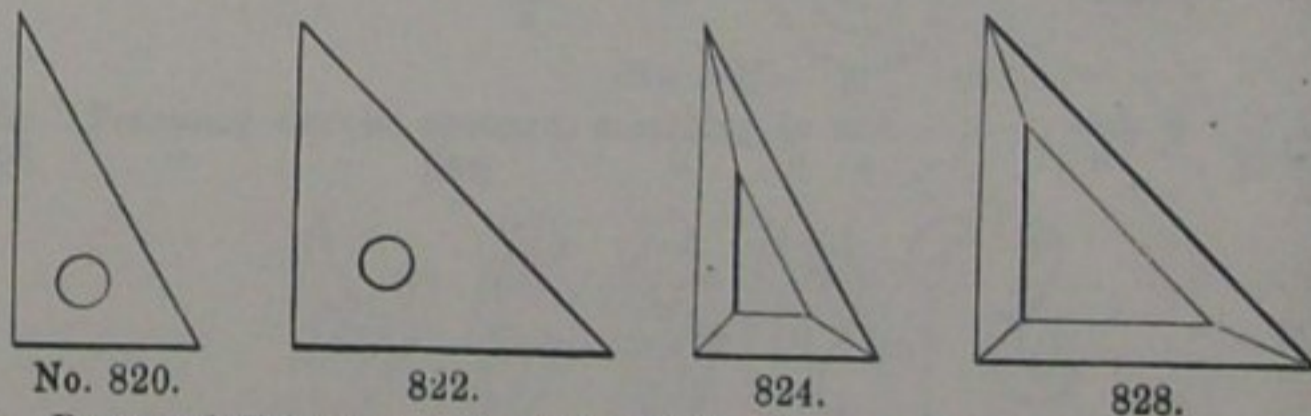
805.	T Squares, Steel blade nickel plated, japanned iron head			
	18.	24.	30.	36 inch
	each \$ 3 25	4 50	5 50	6 50
806.	do.	do.	shifting head, swivel No. 813	
	18.	24.	30.	36 inch
	each \$ 4 75	6 00	7 00	8 00
807.	Engravers T Square, Steel Blade, brass head, fixed			
	4.	6.	8 inch	
	each \$ 1 00	1 25	1 50	
808.	do.	do.	shifting head	
	4.	6.	8 inch	
	each \$ 1 25	1 50	1 75	

### SWIVELS FOR T SQUARES.

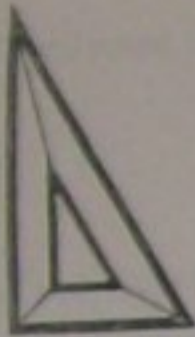


810.	Common Swivel, Brass . . . . .	each \$	25
811.	Fine " milled head, Brass . . . . .	"	40
812.	" " with nut and washer, Brass . . . . .	"	80
813.	" " " " " Nickel plated . . . . .	"	1 00

### TRIANGLES, CURVES ETC.



820.	Pearwood Triangles, plain, 30 × 60°:	7.	9 inch	
		each \$ 15	20	
822.	" do. " 45°: 5½.	7½ inch		
		each \$ 15	20	
824.	Pearwood or Cherry Triangles, framed, 30 × 60°:			
	No. 824.	825.	826.	827.
	7.	9.	11.	14 inch
	each \$ 20	25	30	40
828.	Pearwood or Cherry Triangles, framed, 45°: 5½.			
	No. 828.	829.	830.	831.
	7½.	9.	11 inch	
	each \$ 20	25	30	40



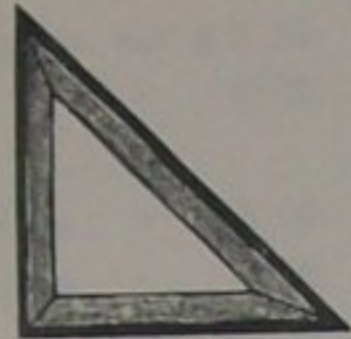
No. 832.



837.



854.



860.

832. Pearwood or Cherry Triangles, lined,  $30 \times 60^\circ$ :

No. 832.	833.	834.	835.	836.
7.	9.	11.	14.	17 inch
each \$ 25	40	50	60	75

837. Pearwood or Cherry Triangles, lined,  $45^\circ$ :

No. 837.	838.	839.	840.	841.
5½.	7½.	9.	11½.	14 inch
each \$ 25	40	50	60	75

854. Mahogany Triangles, Ebony lined,  $30 \times 60^\circ$ :

No. 854.	855.	856.	857.	858.	859.
7.	9.	11.	14.	17.	20 inch
each \$ 60	70	80	1 00	1 25	1 75

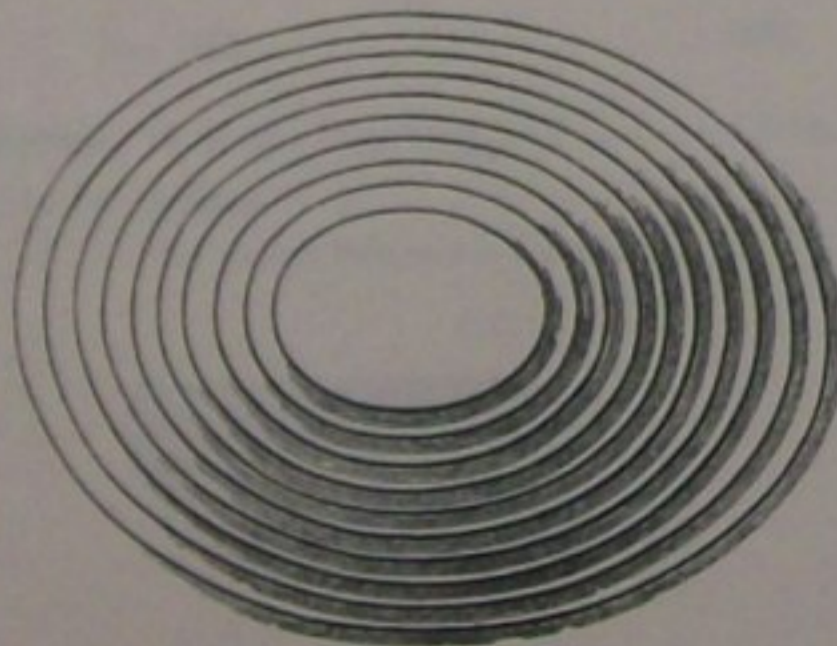
860. Mahogany Triangles, Ebony lined,  $45^\circ$ :

No. 860.	861.	862.	863.	864.	865.
5½.	7½.	9.	11½.	14.	16½ inch
each \$ 60	70	80	1 00	1 25	1 75

867. German Silver Triangles,  $30 \times 60^\circ$  6. 7. 8. 10. 12. 14 inch  
 each \$ 2 50 2 75 3 00 3 50 4 00 5 00

871. German Silver Triangles,  $45^\circ$  5. 6. 7. 8. 10. 12 inch  
 each \$ 2 25 2 75 3 00 3 50 4 00 5 00

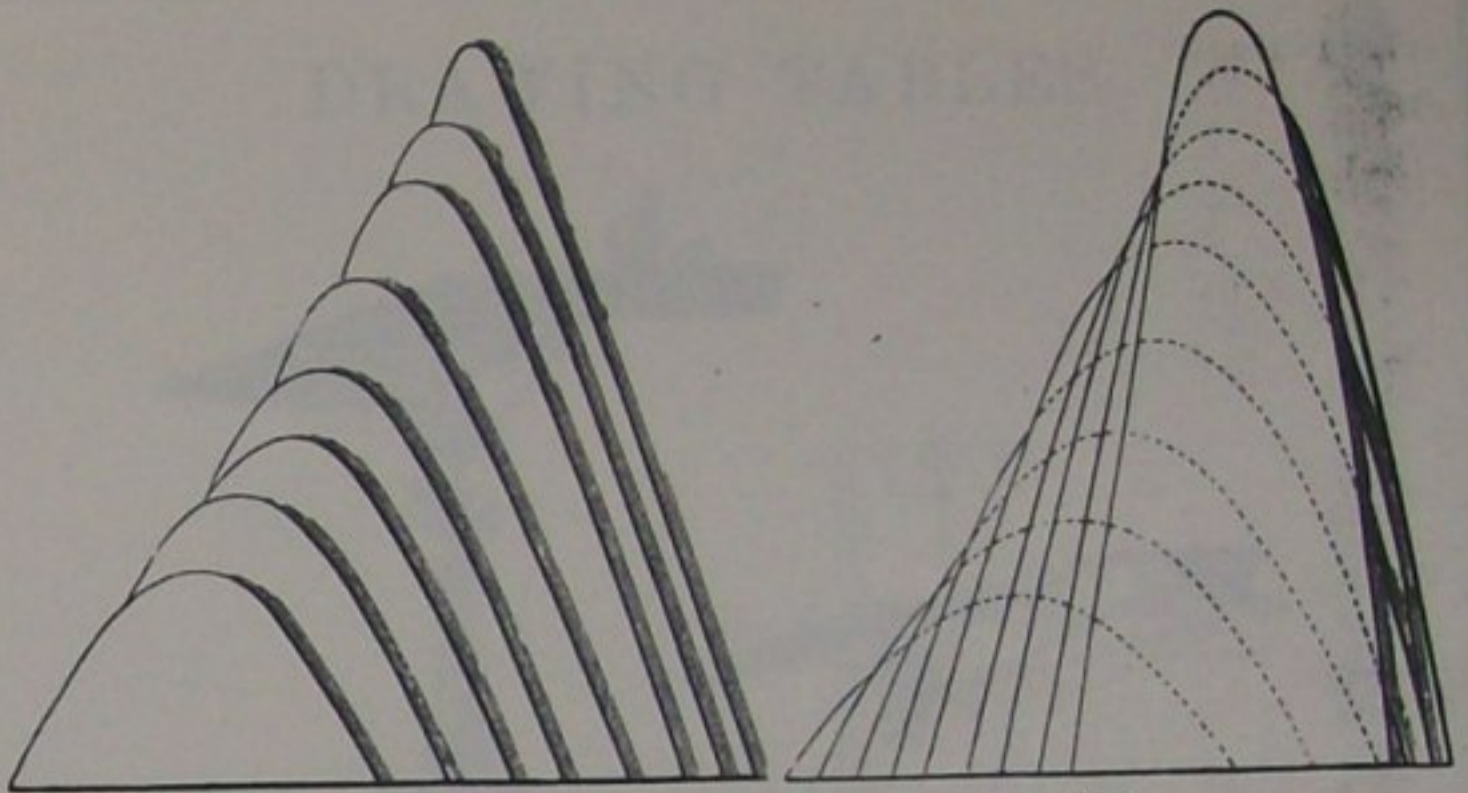
Steel Triangles: plain and with open centre, 5 to 10 inch.



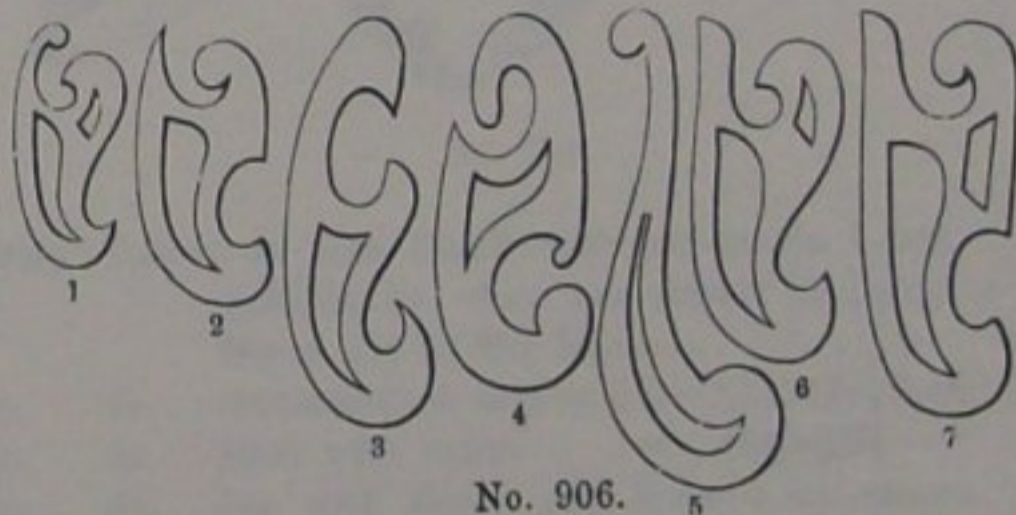
No. 900.

900. Pearwood Ellipses, 10 in set, from 2 to 6 inch long. . . set \$ 2 00  
 901. do. 6 " " " 1½ " 4½ " long. . . " 1 25

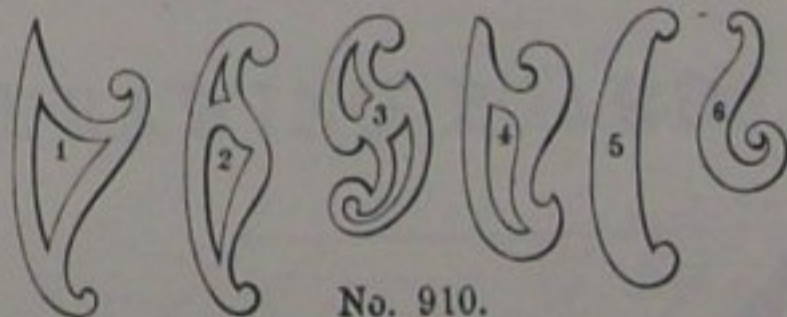
For Rubber Ellipses see No. 1067.



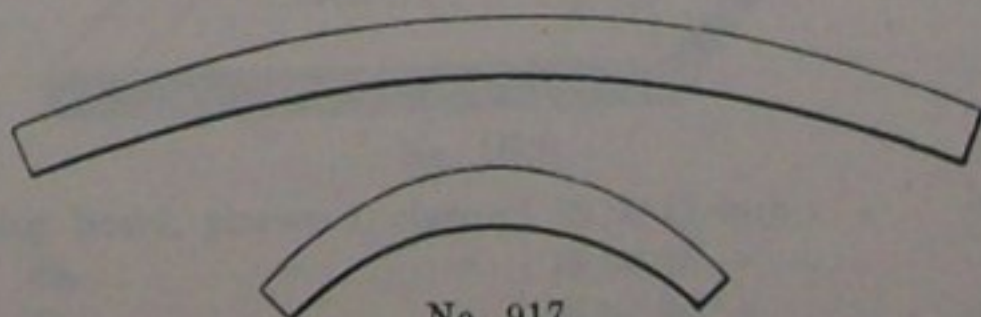
	No. 902.	903.	
902.	Pearwood Hyperbolas,	8 in set, 2 to 5½ inch . . . . .	set \$ 1 50
903.	" Parabolas,	8 " " 1½ " 5½ " . . . . .	" 1 50
904.	" do.	8 " " 3½ " 14½ " . . . . .	" 3 00



	No. 906.	
905.	Pearwood Curves, common, according to size . . . . .	each \$ 15 to 30
906.	" " fine, " " " . . . . .	" 25 to 50

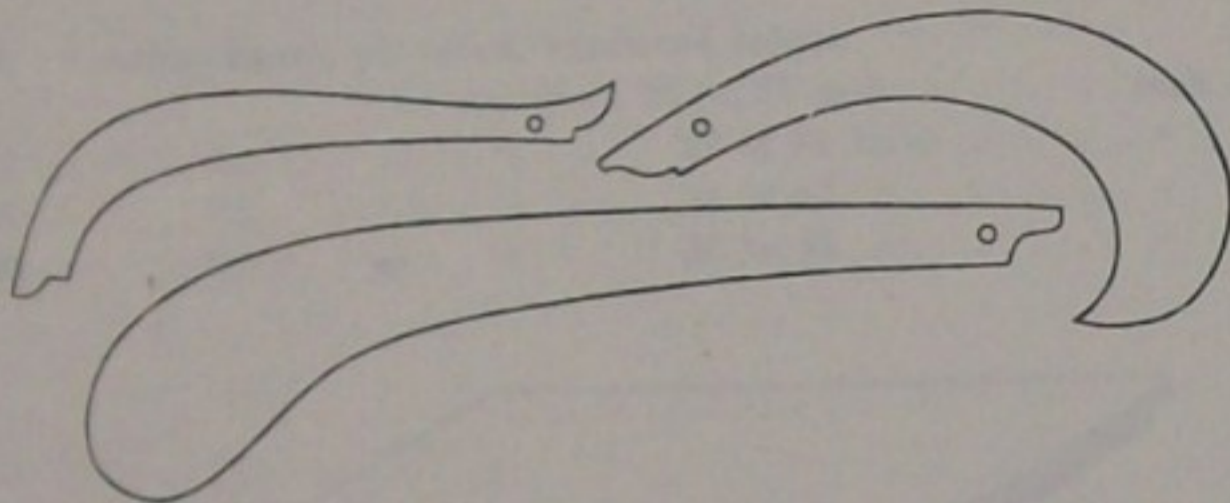


	No. 910.					
910.	Horn Curves No. 1.	2.	3.	4.	5.	6.
	each \$ 60	75	80	65	65	55



No. 917.

917.	Pearwood Rail Road Curves,	10 in set,	12 to 120 inch radius	set	\$ 3 50
918.	" do.	" 17 " "	12 " 60 " "	" "	6 00
918-1.	" do.	" 100 " "	1 " 100 " "	" "	
				in Case	" 25 00
919.	Card Board Rail Road Curves,	30 in set,	1½ to 60 inch radius	"	6 60
920.	" do.	" 50 " "	1½ " 120 " "	"	11 00



921. Pearwood Ship Curves, 10 in set . . . . . set \$ 5 50  
 For Rubber Ship Curves, see No. 1065.



No. 922.

923.

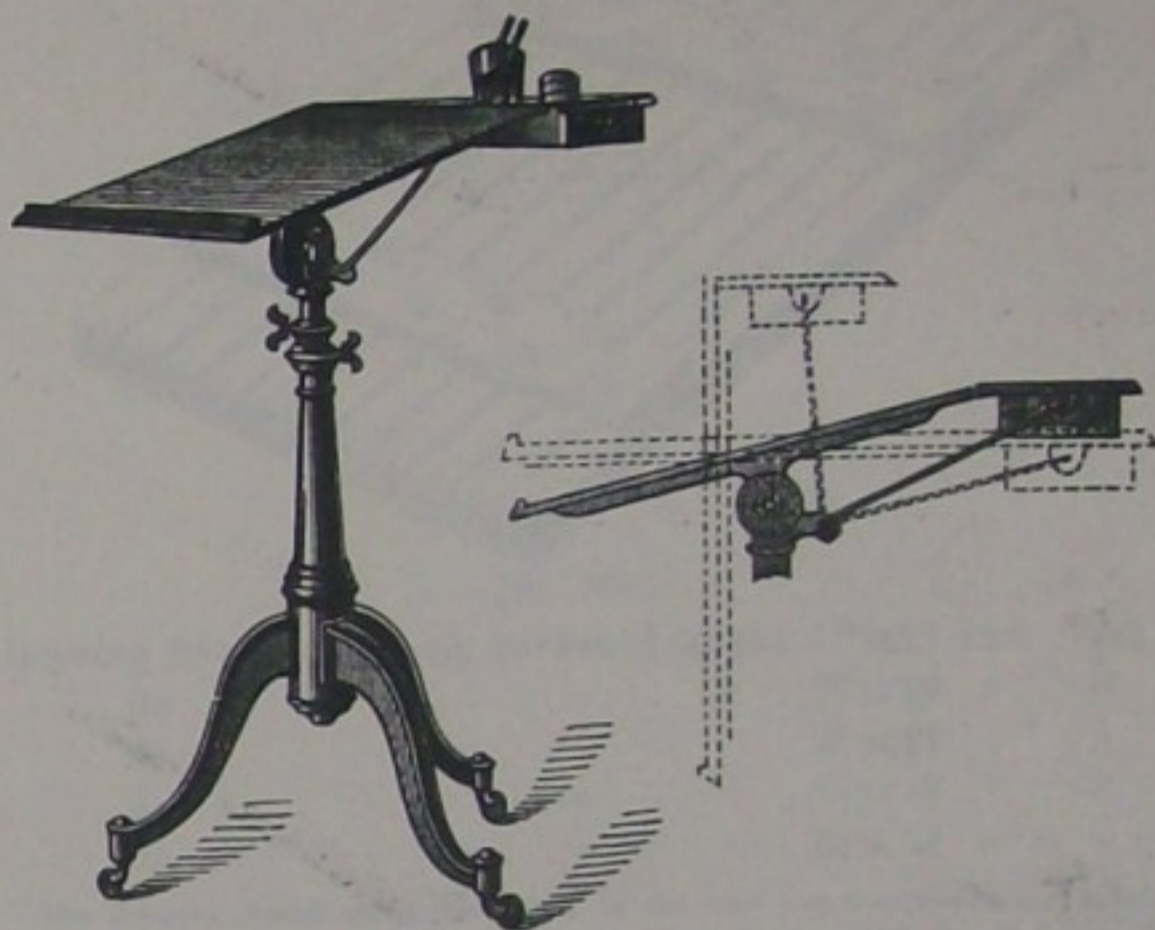
922. Pearwood Splines, 12 to 36 inch long . . . . . from \$ 0 15 to 30  
 923. Lead Weights for Splines . . . . . each \$ 1 50  
 For Rubber Splines, see No. 1066.



No. 924.

924. Lead Paper Weights, covered with leather . . . . . each \$ 1 00  
 925. Iron Paper Weights, round with knob. small . . . . . " 60  
 926. do. do. square " large . . . . . " 1 00

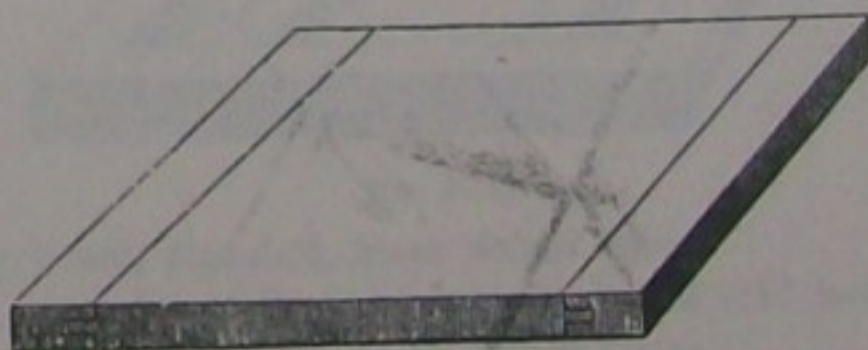
## DRAWING TABLES.



No 989.

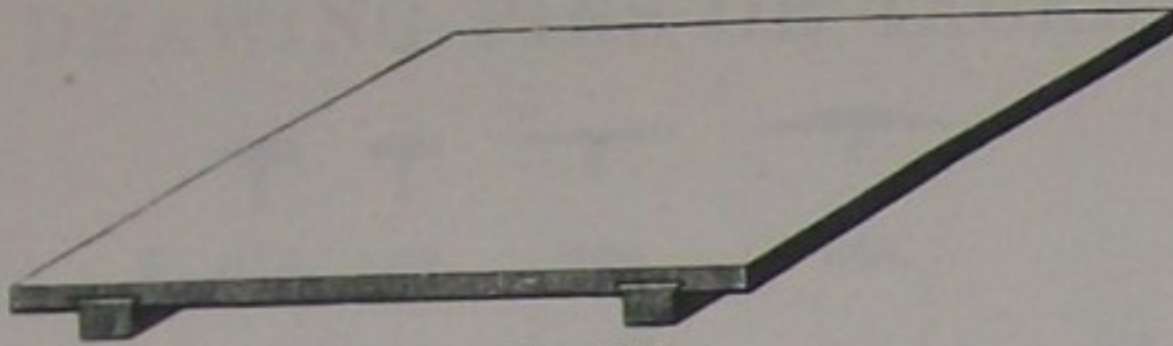
986.	Drawing Table, on Iron Stand with adjustable Board, suitable for office and private use, plain Board $21\frac{1}{2} \times 25\frac{1}{2}$ inch . . . . .	each	\$ 10 50
987.	do. do. ornamental on castors, Board $21\frac{1}{2} \times 25\frac{1}{2}$ inch	"	12 50
988.	do. do. plain with shelve " $21\frac{1}{2} \times 25\frac{1}{2}$ "	"	12 00
989.	do. do. fine with shelve and drawers on castors Board $21\frac{1}{2} \times 25\frac{1}{2}$ . . . . .	"	15 00

## DRAWING BOARDS.



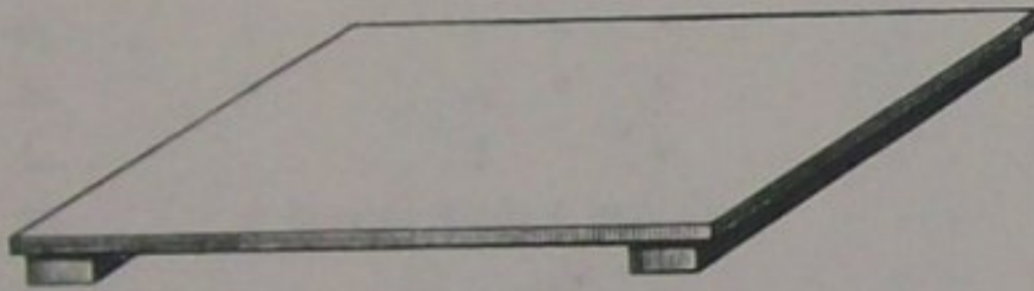
No. 1000.

1000.	Drawing Board, pinewood, clamped $12 \times 17$ inch . . . . .	each	\$ 75
1001.	do. " " $15 \times 21$ " . . . . .	"	1 20
1002.	do. " " $20 \times 26$ " . . . . .	"	1 75



No. 1003.

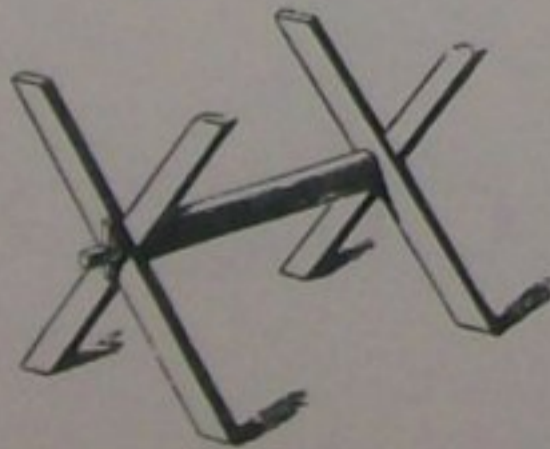
1003.	Drawing Board, pinewood, hardwood ledges, dovetailed in 23 × 31 inch . . . . .	each	\$ 3 00
1004.	do. " 27 × 34 inch . . . . .	"	3 75
1005.	do. " 31 × 42 " . . . . .	"	4 50
1006.	do. " 33 × 55 " . . . . .	"	8 00



No. 990.

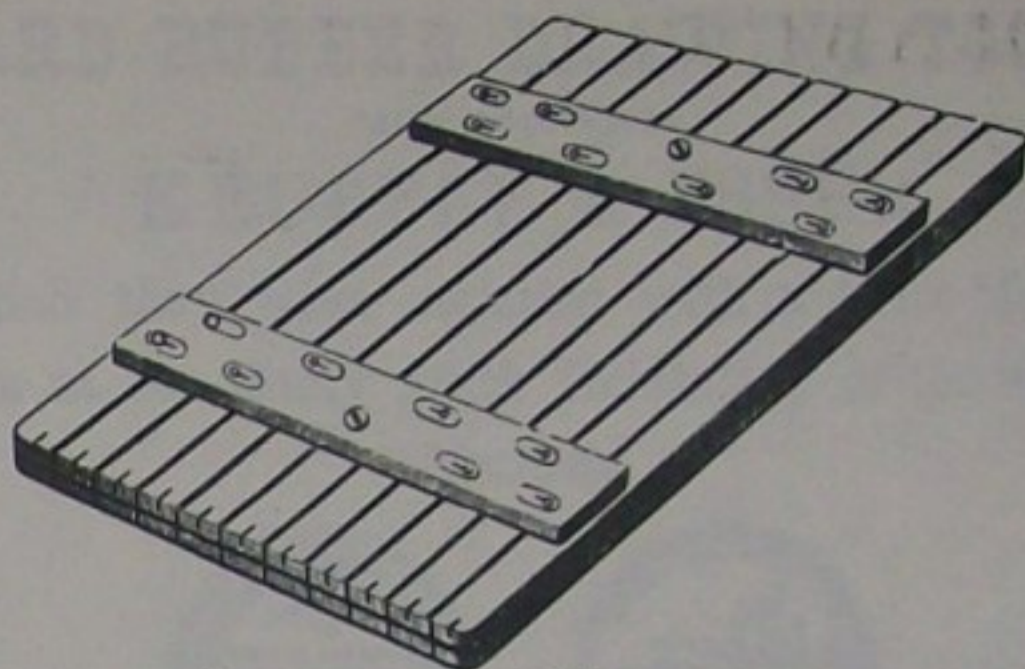
990. Drawing Board, pinewood, hardwood ledges, screwed to the back, the screws run in slots to allow free contraction or expansion, as described at No. 1007.

	16 × 21 . . . . .	each	\$ 1 50
991.	20 × 26 . . . . .	"	2 20
992.	23 × 31 . . . . .	"	3 50
993.	27 × 34 . . . . .	"	4 25
994.	31 × 42 . . . . .	"	5 50
995.	33 × 55 . . . . .	"	9 00



No. 1017.

1017. Trestles made of well seasoned Pine, 36 inch high,  
46 inch long . . . . . each \$ 7 50

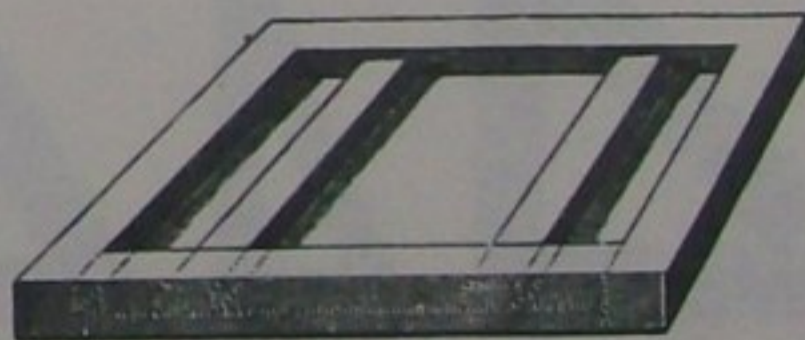


No. 1007.

1007.	Drawing Board, pinewood, hardwood ledges, 16×21 inch	each	\$ 3 00
1008.	do. " " " 20×26 "	"	4 50
1009.	do. " " " 23×31 "	"	6 00
1010.	do. " " " 31×42 "	"	8 50
1011.	do. " " " 33×55 "	"	12 00

The Drawing Board above illustrated is the best and deserves recommendation, as it is the only one which possesses the qualities, a good and true board should have. It is made of pinewood, glued up to the required width, with the heart side of each piece of wood to the surface. A pair of hardwood ledges are screwed to the back, the screws pass through the ledges in oblong slots, bushed with brass, which fits closely under the heads and yet allows the screws to move freely when drawn by the contraction of the board. To give the ledges the power to resist the tendency of the surface to warp, a series of grooves are sunk in half the thickness of the board over the entire back. These grooves take the transverse strength out of the wood to allow it to be controlled by the ledges, leaving at the same time the longitudinal strength of the wood nearly unimpaired.

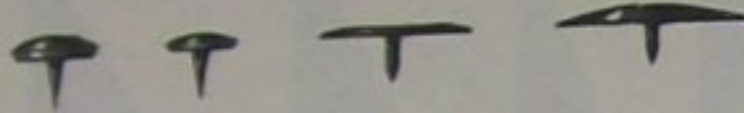
To make the two working edges perfectly smooth, allowing an easy movement with the square, a slip of hardwood is let into the end of the board. The slip is afterwards sawn apart at about every inch to admit contraction.



No. 1012.

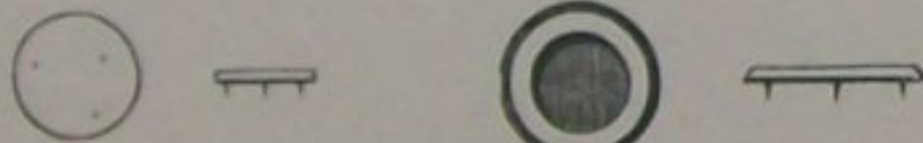
1012.	Drawing Board, pinewood, black walnut frame,		
	size of Board without frame 12½×16 inch	each	\$ 2 50
1013.	Drawing Board, pinewood, black walnut frame,		
	size of Board without frame 14×19 "	"	3 00
1014.	do. do. do. 16×21 "	"	3 50
1015.	do. do. do. 18×26 "	"	5 00
1016.	do. do. do. 21×29 "	"	6 00

# DRAWING PINS OR TACKS.



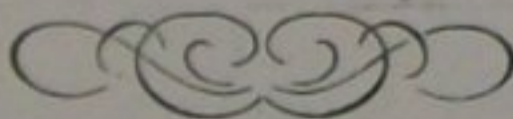
No. 1018. 1019. 1028. 1024.

1018.	Brass Tacks, steel points, $\frac{1}{4}$ inch diam.	. . . . .	doz	\$	20
1019.	Solid Steel do.	$\frac{3}{8}$ " "	. . . . .	"	25
1020.	" " do. fine	$\frac{3}{8}$ " "	. . . . .	"	80
1021.	German Silver, steel points, screwed in and riveted,				
	round head, $\frac{3}{8}$ inch diam.	. . . . .	"		60
1022.	do.	$\frac{1}{2}$ " "	. . . . .	"	65
1023.	do.	$\frac{7}{8}$ " "	. . . . .	"	70
1024.	do.	$\frac{1}{2}$ " "	. . . . .	"	80
1025.	do.	$\frac{3}{8}$ " "	. . . . .	"	90
1025 $\frac{1}{2}$ .	do.	$\frac{1}{2}$ " "	. . . . .	"	1 00
1026.	do.	" beveled head, $\frac{1}{2}$ inch diam.	. . . . .	"	65
1027.	do.	" " $\frac{7}{8}$ " "	. . . . .	"	70
1028.	do.	" " $\frac{1}{2}$ " "	. . . . .	"	80
1028 $\frac{1}{2}$ .	do.	" " $\frac{3}{8}$ " "	. . . . .	"	90
1028 $\frac{1}{4}$ .	do.	" " $\frac{1}{2}$ " "	. . . . .	"	1 00



No. 1029. 1030.

1029.	Horncentre plain, $\frac{1}{2}$ inch diam.	. . . . .	each	\$	15
1030.	do. with German Silver edge, $\frac{1}{2}$ inch diam.	. . . . .	"		50





# HARD RUBBER DRAWING TOOLS

MANUFACTURED BY

## KEUFFEL & ESSER

for which they were awarded with a Prize-Medal and Diploma at the thirty ninth Exhibition of the American Institute.

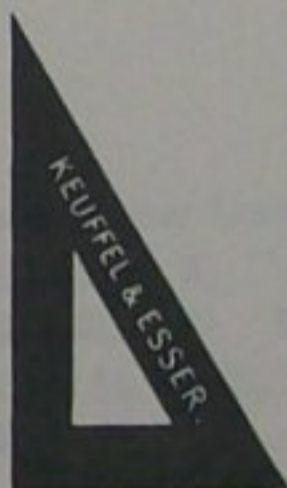
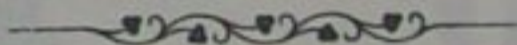


All Tools of Hard Rubber are highly recommended. Their superiority over others is proved and recognized by the best authorities. They are annealed and consequently not affected by changes of temperature.

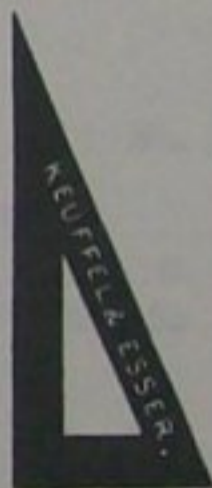
The Triangles and Curves are of the utmost durability in comparison with those made of wood, which either break or get loose at the joints.

The density of the Rubber permits a very high finish on the edges equal to metal, which is a great advantage to the Angles, Curves, Rules and T Squares.

The Hard Rubber Scales to which we call the attention, will give the greatest satisfaction. They are especially adapted for use in more or less dark offices and by gaslight and will in every case and under all conditions be found, to be a great success, as they do not fatigue the eye.



30 × 60°  
No. 1050.



22 1/2 × 67 1/2°



45°  
No. 1051.

1050. Hard Rubber Triangles, 30 × 60°

1050-2. " " " 22 1/2 × 67 1/2°

	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16 inch
each \$	25	30	35	40	50	60	65	75	90	1 00	1 25	1 50	1 75

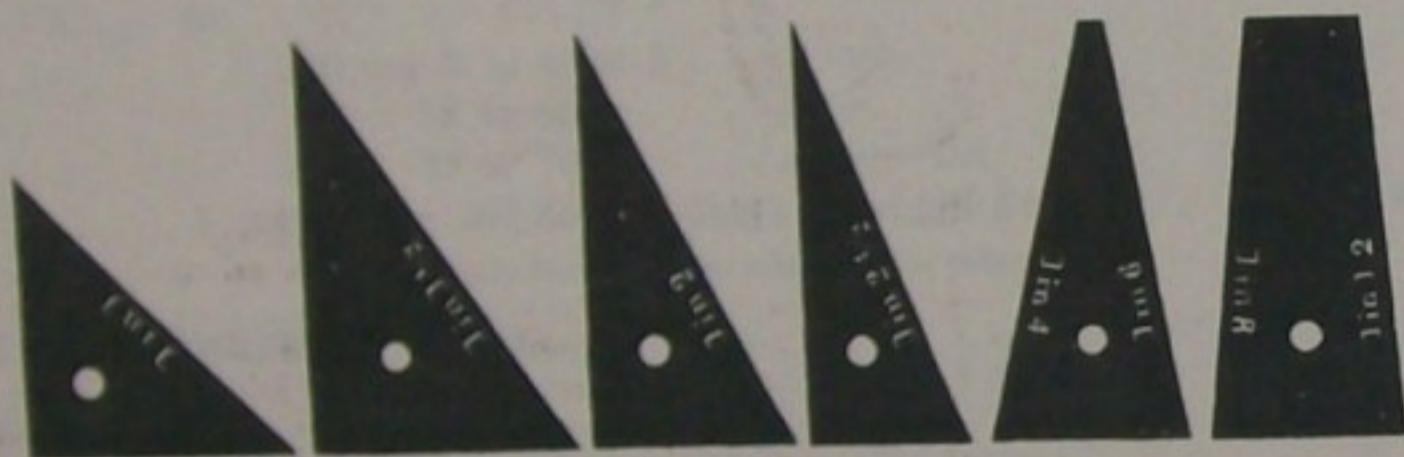
1051. Hard Rubber Triangles, 45°

	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16 inch
each \$	35	40	45	55	70	80	1 00	1 25	1 50	1 75	2 00	2 25	2 50



No. 1052.

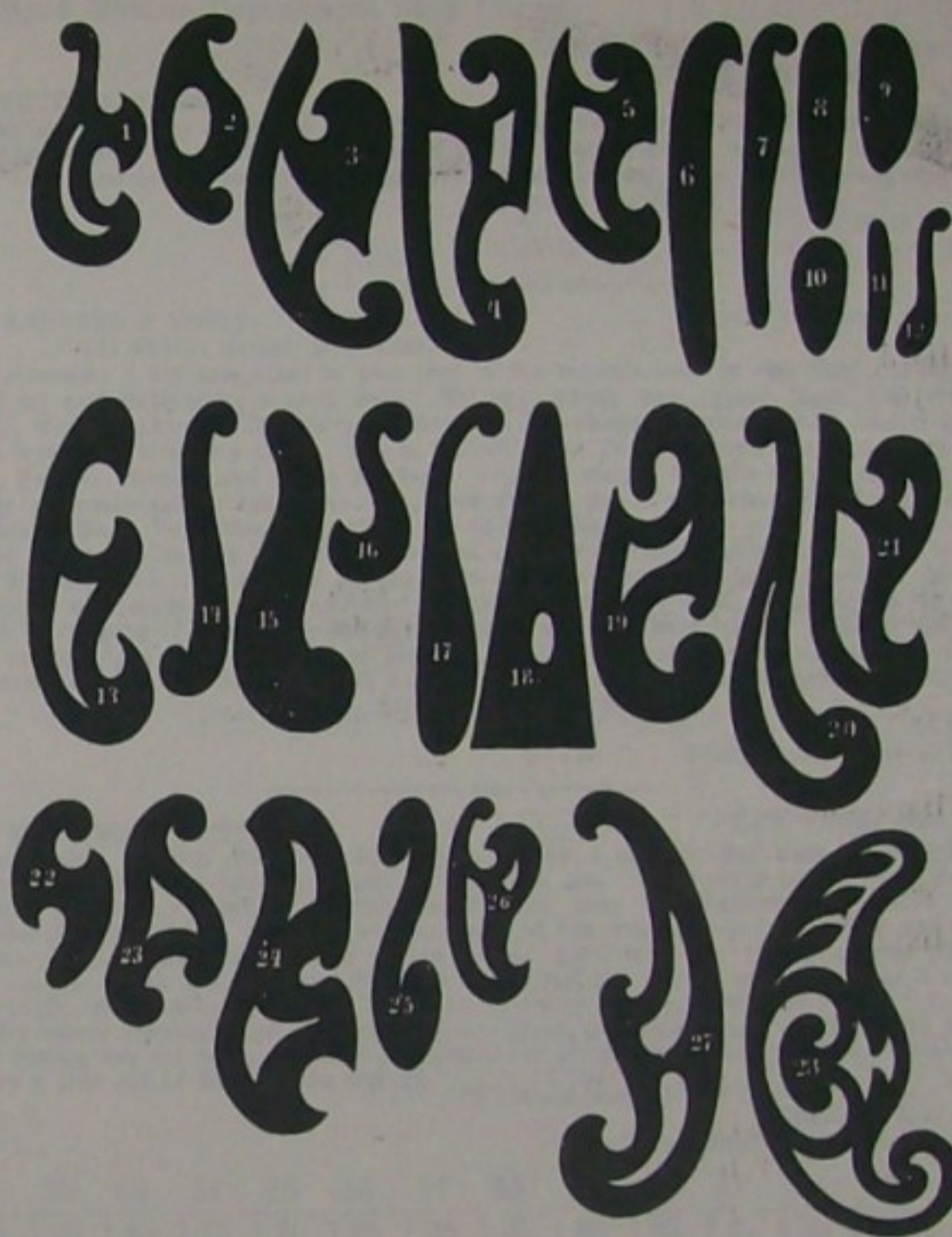
1052. Hard Rubber Triangles for roof pitches, 6 in set . . . set \$ 3 00



No. 1053.

1053. Hard Rubber Triangles for embankments, 8 in set . . . set \$ 4 25

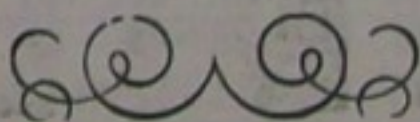




No. 1054.

1054. Hard Rubber Curves:

No. 1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
\$ 35	35	50	50	40	35	30	25	25	20	20	30	50
No. 14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.		
\$ 35	45	35	35	40	50	50	45	85	40	60		
			No. 25.	26.	27.	28.						
			\$ 40	35	75	3 00						



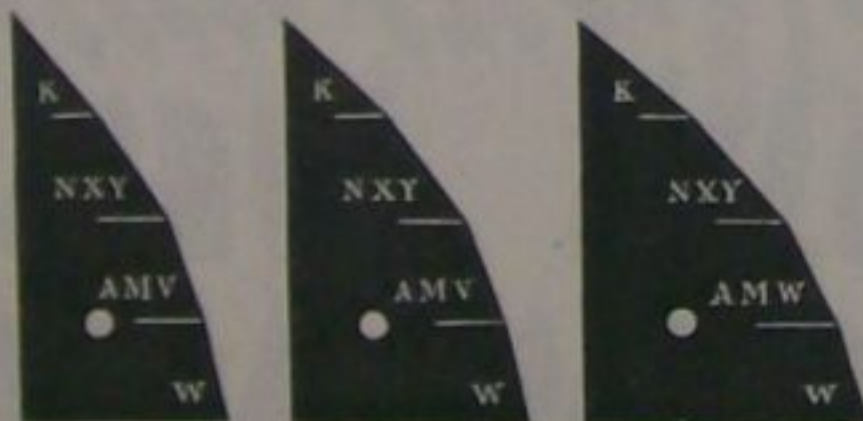


No. 1055.

1055. Hard Rubber Rail Road Curves:  
 10 in set, 12 to 120 inch radius, varying 12 inch, in case, set \$ 7 75
1056. Hard Rubber Rail Road Curves:  
 17 in set, 12 to 60 inch radius, varying 3 inch, in case, set \$ 13 25
1057. do. 40 " " 3 to 120 " "  
 varying 3 to 15 inch . . . 1 inch  
 " 18 to 60 " . . . 3 "  
 " 66 to 120 " . . . 6 " and  
 1 Curve 1° to 100 Scale, 1 Curve 2° to 100 Scale . . . " " 30 00  
 Single Curves of any radius cut to order.

1066. Hard Rubber Splines,  

	12.	18.	24.	30.	36.	42 inch
each \$	25	30	35	40	45	50
1067. Hard Rubber Ellipses, (see Illustration No. 900)  
 10 in set from 2 to 6 inch long . . . . . each \$ 2 00
1068. do. do.  
 6 in set from 1½ to 4½ inch long . . . . . " 1 50
1069. Hard Rubber Hyperbolas (see Illustration 902)  
 8 in set from 2 to 5½ inch long . . . . . " 2 25
1070. Hard Rubber Parabolas (see Illustration 903)  
 8 in set from 1½ to 5½ inch long . . . . . " 2 25
1071. do. do.  
 8 in set from 3½ to 14½ inch long . . . . . " 5 00



No. 1072.

1072. Hard Rubber Lettering Triangles, 3 in set, 3¼ inch . . . each \$ 1 25

1065. Hard Rubber Copenhagen Ship Curves.

\*STEVENS INSTITUTE OF TECHNOLOGY,  
\*HOBOKEN, NEW JERSEY.

\*Messrs. KEUFFEL & ESSER.

\*19th June, 1875.

\*Dear Sirs: Having examined the 'COPENHAGEN DRAUGHTING CURVES' made by you, I am happy to be able to recommend them as of the best quality, in regard to both finish and accuracy; and have no hesitation in saying that they are the only ones worth having that I knew of.

\*Yours respectfully,

\*C. W. MAC CORD,  
\*Prof. Mech. Drawing."

\*Messrs. KEUFFEL & ESSER,  
111 Fulton Street, New York.

\*CITY ISLAND, June 16, 1875.

\*Gentlemen: I am compelled to own that in the manufacture of the Ship Curves you have surpassed my expectations by a good deal. My set, which you copied from, was made by Mr. L. SCHOU, Model Maker for the Navy Department, Copenhagen, Denmark, well known to me when I studied Naval Architecture there. Mr. L. SCHOU, now dead for some years, used to supply all Germany, Sweden, Russia, and partly England, with his make, and the Curves made by him were deservedly acknowledged as the best. He copied from a set of true Parabolic Curves constructed by the Danish Navy Department especially for ship drafting.

\*The Curves which you have now produced are in every respect as well gotten up and finished as those SCHOU used to make, and as they are made of rubber, I must consider them superior to his, which were made of box, and other suitable woods. But wood, even ever so well seasoned, is subject to warping if exposed to too dry or damp air, as I experienced with my set even after a use of nearly eight years. I hope, in the sale of these Curves, you will meet with the success you so amply deserve for the pains you have taken to have them manufactured in this country.

\*Yours truly,

\*G. HILLMANN,  
\*Ship Builder & Naval Architect."

\*Messrs. KEUFFEL & ESSER.

\*NEW YORK, June 10, 1875.

\*Gentlemen: Having examined your Rubber Curves, I not only find them extraordinarily well made, but also the best I have ever seen for practical use. They are a true copy of the original Copenhagen Set, and I think that, with proper care, they will outlast any wooden set. They possess one great advantage over the wooden ones, of not warping, and therefore will always lie flat on the paper. Considerable credit is due to you, gentlemen, for taking up the manufacture of these Curves, which had become extinct on account of the demise of the former manufacturer in Copenhagen, Dänemark; and since they are virtually the only reliable set of true Parabolic Curves (all others varying more or less), and the most preferable ones for designing of Vessels, all those having use for them should avail themselves of this opportunity of being able once more to procure a true set of Copenhagen Curves.

\*I remain, respectfully yours,

\*M. HUBBE,  
\*Naval Architect & Marine Engineer."

No. 31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
\$ 1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	
No. 46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
1 25	1 25	1 00	80	80	80	60	60	1 00	80	1 25	80	80	80	80	
No. 61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	
75	75	75	75	75	50	50	50	50	50	50	50	50	50	50	
No. 76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	
50	50	50	50	50	50	50	50	40	50	50	60	75	75	60	
No. 91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	
60	50	40	50	40	40	50	50	40	40	40	40	40	35	35	
No. 106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	
40	50	50	75	75	50	60	40	40	40	40	35	25	50	35	
No. 121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	
35	30	25	25	25	25	25	35	40	50	40	40	40	40	40	
No. 136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151
35	30	40	40	40	40	40	35	40	40	40	40	40	40	50	50
One Set of 120 Hard Rubber Copenhagen Ship Curves,															
in Black Walnut Case . . . . .														\$ 65 00	



1073. Hard Rubber Rolling Parallel Rules.

Nickel plated mountings,

	9.	12.	15.	18.	24 inch
each	\$ 4 20	5 00	6 00	7 50	10 50



1058. Hard Rubber Scale, flat, 6 inch, div.  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 inch . . . each \$ 75

1059. " " do. " 12 " "  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 " . . . " 1 25

1060. " " do. " 12 " "  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $1\frac{1}{2}$ , 3 " . . . " 1 25

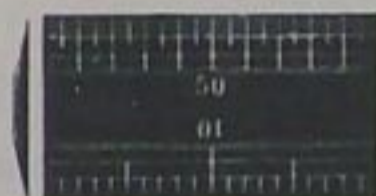


1061. Hard Rubber Chain Scale, 6 inch

div.  $10 \times 50$ .  $20 \times 40$  or  $30 \times 60$  each \$ 1 00

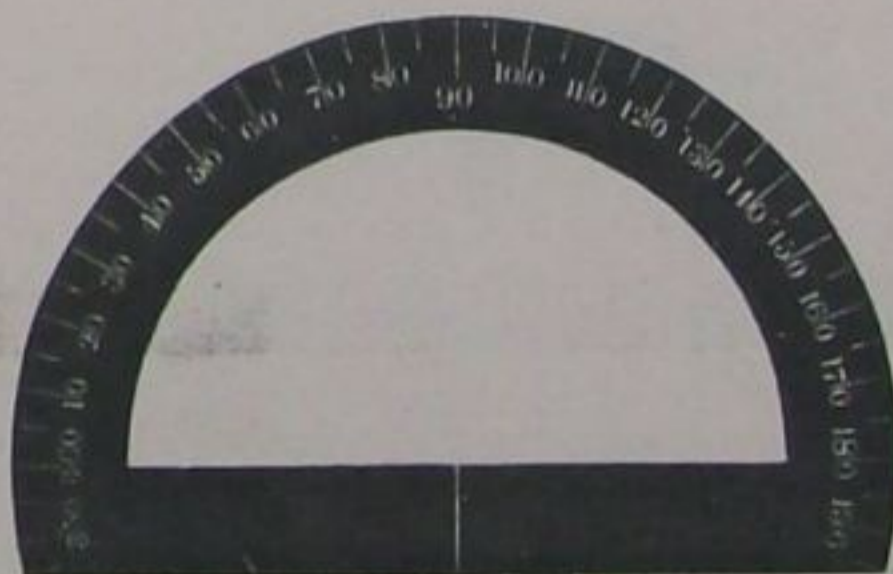
1062. " " do. 12 inch div.  $10 \times 50$ .  $20 \times 40$  or  $30 \times 60$  " 1 40

No. 1063.



1063. Hard Rubber Offset Scales, 2 inch to match No. 1062 . . . each \$ 50

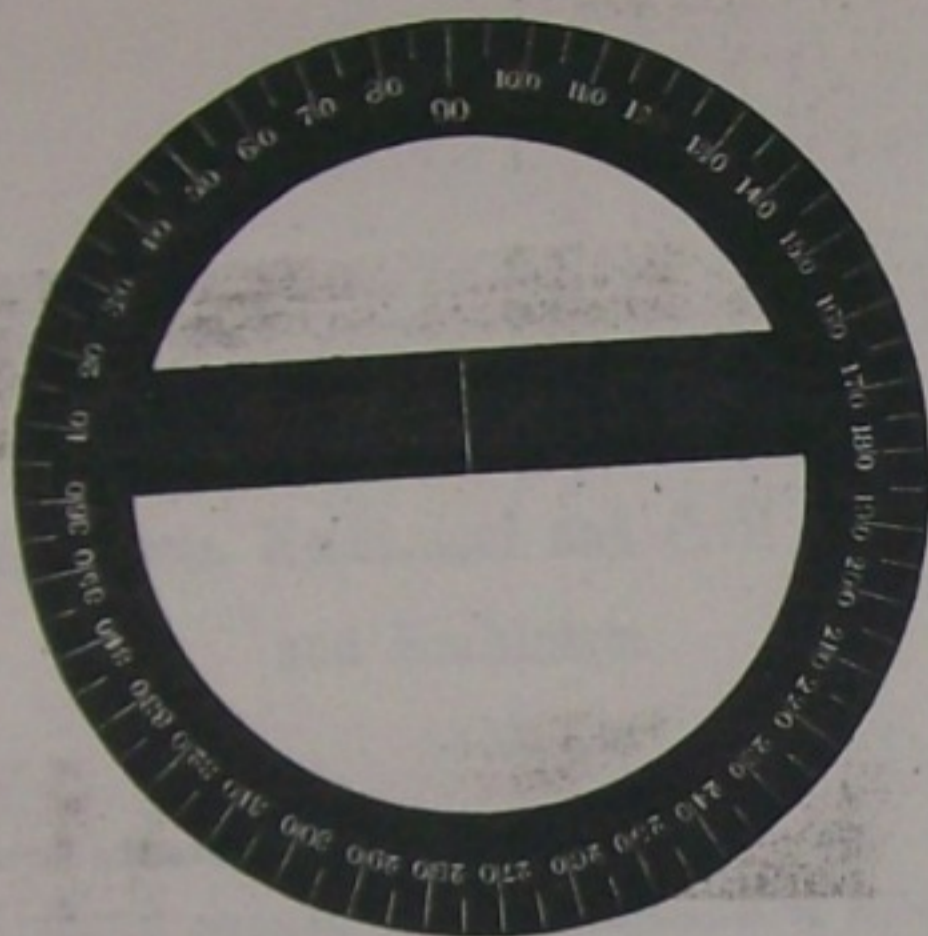
Sets of Scales in Cases, contg. 6 to 12 Scales.



No. 1075.

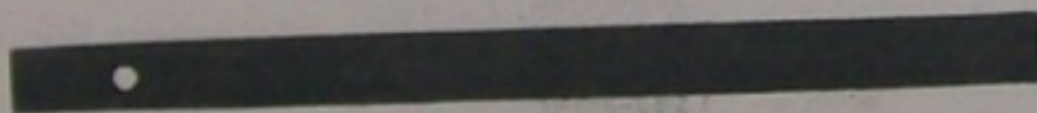
1075. Semicircular Rubber Protractors 6 inch . . . \$ 4 00

1076. do. do. 8 " . . . " 5 00



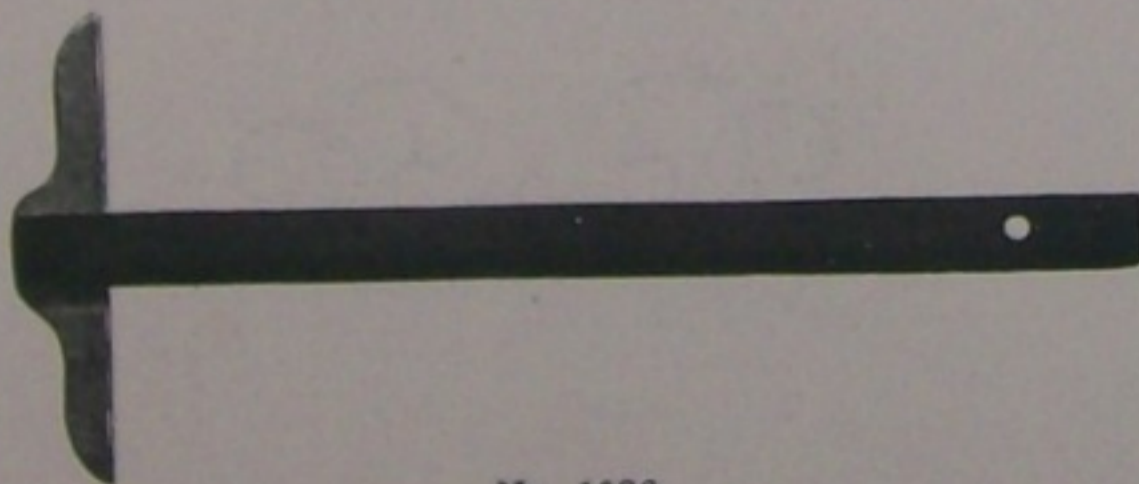
No. 1080.

1080.	Circular Rubber Protractor, 6 inch	1/2	. . . . .	each	\$ 5 00
1081.	" do.	8 "	1/2 . . . . .	"	6 50
1081-1.	" do.	10 "	1/2 . . . . .	"	8 00



No. 1082.

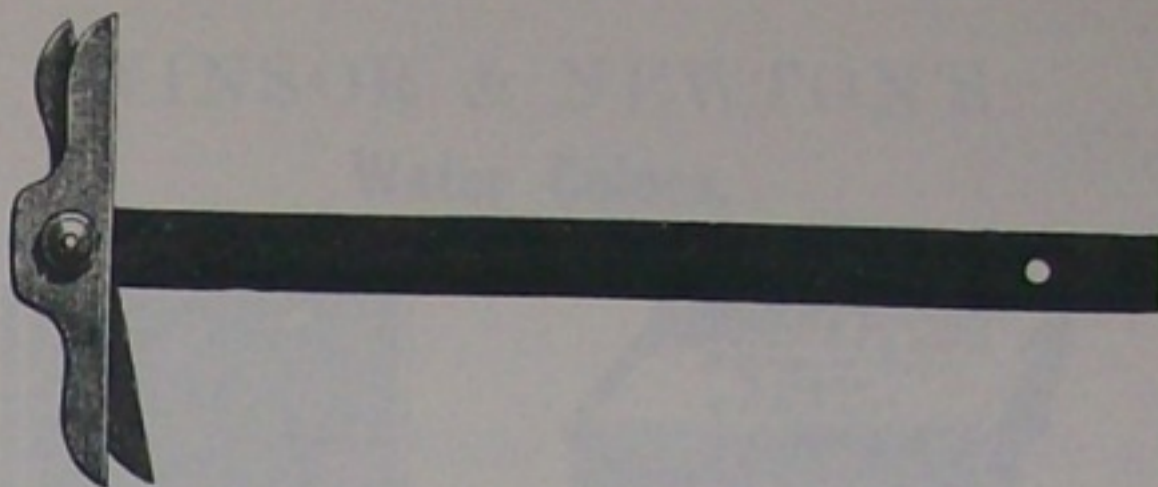
1082.	Hard Rubber Rules							
	12.	15.	18.	21.	24.	30.	36.	42 inch
each \$	50	60	70	90	1 25	1 80	2 20	2 75



No. 1086.

1086.	T-Squares, Rubber blade, black walnut head, fixed								
	6.	9.	12.	15.	18.	21.	24.	30.	36 inch
each \$	65	85	90	1 00	1 20	1 50	1 75	2 40	3 00





No. 1090.

1090. T Squares, Rubber blade, black walnut head, shifting,  
with swivel No. 812

	12.	15.	18.	21.	24.	30.	36 inch
each	\$ 1 60	1 75	2 00	2 25	2 75	3 25	4 00
1090.	do.	do.		with swivel No. 813 extra each \$ 20			

STEEL RULES, SQUARES, TRY SQUARES, CALIPERS ETC.

MANUFACTURED BY

MESSRS. DARLING, BROWN & SHARPE, PROVIDENCE.

Furnished at Manufacturer's Prices.

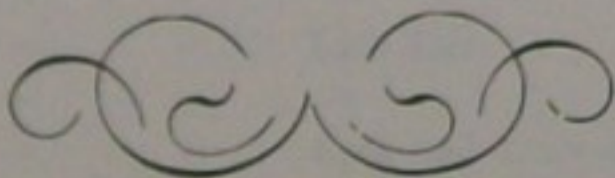


## WATER COLORS

for Architects, Mechanical and Civil Engineers  
and Machinists.

The principal advantage of these colors, exists in a serie of tints, ready mixed for all technical purposes, enabling draughtsmen to reproduce the same tint, without the difficult and laborious process of mixing.

The collections below show boxes, arranged with the colors required by Architects, Machinists, Civil Engineers and Mechanical Draughtsmen, the value of which we feel assured, will soon be appreciated, and we have no doubt that these colors will receive the well deserved credit, that the enjoy for many years abroad.



# WINSOR & NEWTON'S Water Colors.



Full Cake.



Full Pan.



Half Cake.



Half Pan

			Full Cake or Pan.	Half Cake or Pan.
1100.	1. Antwerp Blue	19. Hooker's		
	2. Bistre	Green, No. 1		
	3. Blue Black	20. Hooker's		
	4. British Ink	Green, No. 2		
	5. Brown Ochre	21. Indigo		
	6. Brown Pink	22. Indian Red		
	7. Bronze	23. Italian Pink		
	8. Burnt Sienna	24. Ivory Black		
	9. Burnt Umber	25. King's Yellow	25	15
	10. Chinese White	26. Lamp Black		
	11. Chrome Yellow	27. Light Red		
	12. Cologne Earth	28. Naples Yellow		
	14. Deep Chrome	29. Neutral Tint		
	15. Dragon's Blood	30. New Blue		
	16. Emerald Green	31. Olive Green		
	17. Flake White	32. Orange Chrome		
	18. Gamboge	33. Payne's Grey		
1101.	49. Black Lead	53. Indian Yellow		
	50. Brown Madder	54. Mars Yellow		
	51. Chalou's Brown	55. Neutral Orange	60	30
	13. Constant White	56. Purple Lake		
	52. Crimson Lake	57. Roman Sepia		
1102.	63. Cobalt Blue	64. Orange Vermilion	85	45
		65. Violet Carmine		



1118.	12	Cakes, Polished Mahogany	Lock Box . . . . .	each	\$ 4 50
1119.	18	" " " "	" " " " . . . . .	"	6 00
1120.	12	" " " "	Lock and Drawer Box . . . . .	"	5 50
1121.	18	" " " "	" " " " " " . . . . .	"	7 00
1122.	12	" " " "	Complete Box fitted . . . . .	"	6 00
1123.	18	" " " "	" " " " " " . . . . .	"	8 00

## French and German Water Color Boxes

in great variety, from \$ 50 to \$ 10 00 each.

## Empty japanned Tin Boxes

for Moist Colors in Pans.



No. 1128.

1125.	for 6 full or 12 half	Pans . . . . .	each	\$ 1 50
1126.	" 8 " " 16 " "	" " " " " " . . . . .	"	1 75
1127.	" 10 " " 20 " "	" " " " " " . . . . .	"	2 00
1128.	" 12 " " 24 " "	" " " " " " . . . . .	"	2 25
1129.	" 16 " " 32 " "	" " " " " " . . . . .	"	2 50
1130.	" 20 " " 40 " "	" " " " " " . . . . .	"	2 75
1131.	" 24 " " 48 " "	" " " " " " . . . . .	"	3 00

## Water Color Liquids.

1132.	Winsor and Newton's	Chinese White . . . . .	each	\$ 50
1133.	" " " "	Indian Ink . . . . .	"	50
1134.	" " " "	Oxgall . . . . .	"	50
1135.	" " " "	Gold Ink . . . . .	"	50
1136.	" " " "	Carmin . . . . .	"	60
1137.	" " " "	Indelible Brown Ink . . . . .	"	60
1138.	" " " "	Prout's Brown . . . . .	"	60

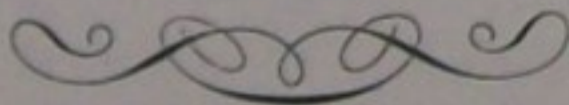


No. 1140.

1139.	Keuffel and Esser's	Carmines	each	\$	40
1140.	"	"	"	"	40
1141.	"	"	"	"	30
1142.	"	"	"	"	30
1143.	"	"	"	"	30
1144.	"	"	"	"	30
1145.	Pure Gold in	Cakes	"	2	00
1146.	"	"	"	"	20
1147.	"	"	"	"	15
1148.	"	"	"	"	25
1150.	Pure Silver in	Shells	"	"	10
1151.	Metallic Cake Colors, in China Saucers,	Gold	"	"	35
1152.	"	do.	"	"	30
1153.	"	do.	"	"	35

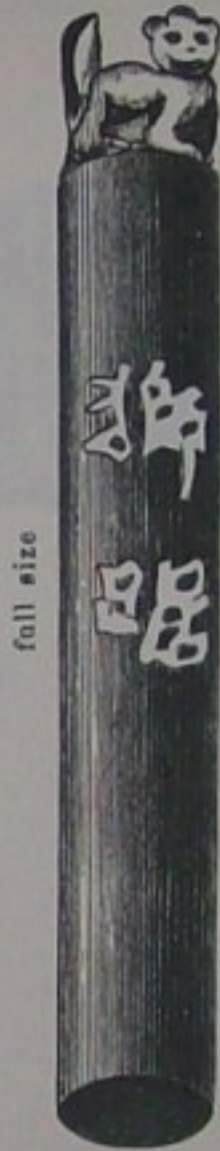
### Empty Mahogany Color Boxes.

1170.	For W. & N. Half Cakes	12	18	24 colors	
	each \$	50	60	75	
1171.	"	Full Cakes	12	18	24 colors
	each \$	60	75	1 00	



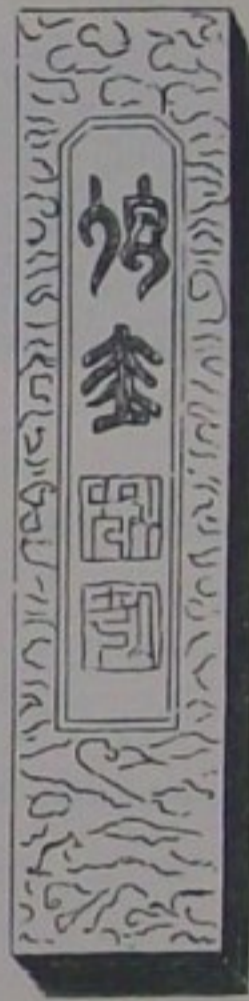
# CHINESE OR INDIAN INK.

This Ink is of a beautiful brown or bluish hue, best adapted for shading and indispensable to Artists for its brilliancy of shade; it is also preferable to any other ink for tracing purposes.



full size

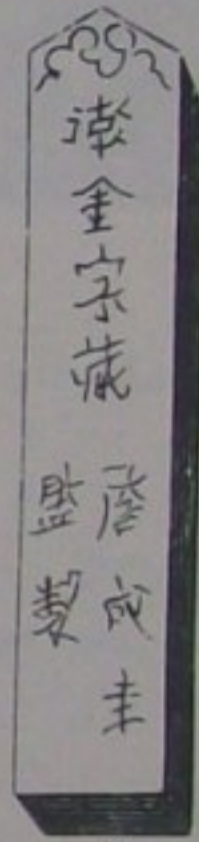
B.



L.



E.



D.



G.



full size

N.

1200.	A.	Oval, Black . . . . .	cake	\$ 25
	B.	" " with Lion Head . . . . .	"	50
	C.	Round, gilt . . . . .	"	30
	D.	Oblong, " . . . . .	"	40
	E.	" " . . . . .	"	60
	F.	Square, black gilt figures . . . . .	"	50
	G.	" " " " . . . . .	"	75
	H.	" " " " . . . . .	"	1 25
	J.	Oblong " " " " . . . . .	"	1 50
	K.	" " " " . . . . .	"	1 25
	L.	" gilt fine . . . . .	"	1 50
	M.	" " " " . . . . .	"	2 00
	N.	Square, Black gilt figures Super, Super . . . . .	each	\$ 1 50



M.

J.

K.

H.

Q.	Oblong, Black, 2½ inch long, fine Quality . . . . .	each \$ 1 50
S.	Hexagon, Gilt, 4½ " " " " . . . . .	" 3 00
T.	Oblong, Black, 3½ " " " " . . . . .	" 3 00
V.	" " 2½ " " " " . . . . .	" 3 50
AA.	" Gilt, 2½ " " very fine Quality . . . . .	" 4 00
AB.	" Black, gilt figures, 4½ inch long, fine Quality	" 10 00
AC.	" " 2½ inch long, fine Quality . . . . .	" 4 00
X.	Blue Chinese Ink, Oblong, 3½ inch long . . . . .	" 1 00
XX.	do. do. " 2½ " " . . . . .	" 75
Y.	Red do. " 2½ " " . . . . .	" 1 00
Z.	do. do. " 2 " " . . . . .	" 75

As the patterns of the very best Quality, which is scarce, are frequently changed, we can give no definite description.



## JAPANESE INK.

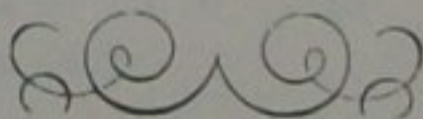
This Ink is best adapted for mechanical drawings, where lines are frequently washed, in applying brush tints. The lines drawn with this ink, will remain clear and distinct and will not be blurred or defaced by the brush.



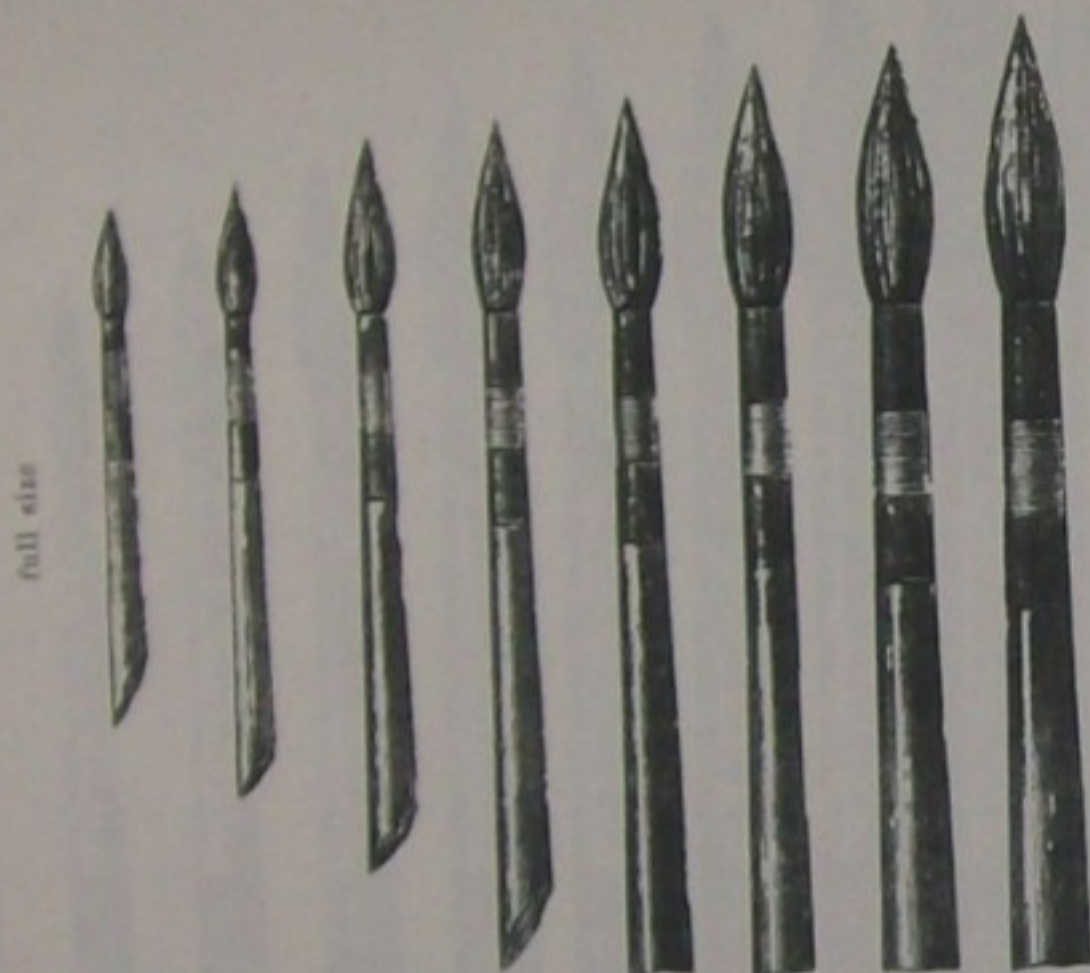
No. 1201.

1201.	Oblong, black with figures, best small cake .	per cake	\$ 1 00
"	" " " " " large " .	" "	3 00
"	" " " " common small .	" "	60
"	" " " " larger . .	from	\$ 1 00 to 5 00

These Inks we import directly from China and Japan.



# BRUSHES.



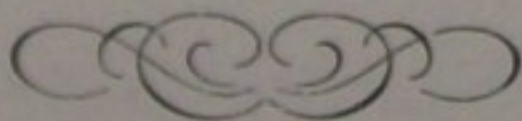
1300. Black Sable in Quills

	No. 1.	2.	3.	4.	5.	6.	7.	8.
each \$	50	40	35	30	20	18	15	12

1301. Red Sable in Quills

	No. 1.	2.	3.	4.	5.	6.	7.	8.
each \$	35	30	25	20	18	15	12	10

1302. Camel Hair in Quills, No. 1—8 . . . . . each \$ 5 to 10





1303. Black Sable in Swan Quills

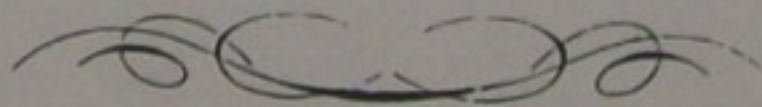
No.	0.	1.	2.	3.	4.	5.	6.
each \$	3 50	2 50	1 50	1 35	1 20	1 00	90

1304. Red Sable in Swan Quills

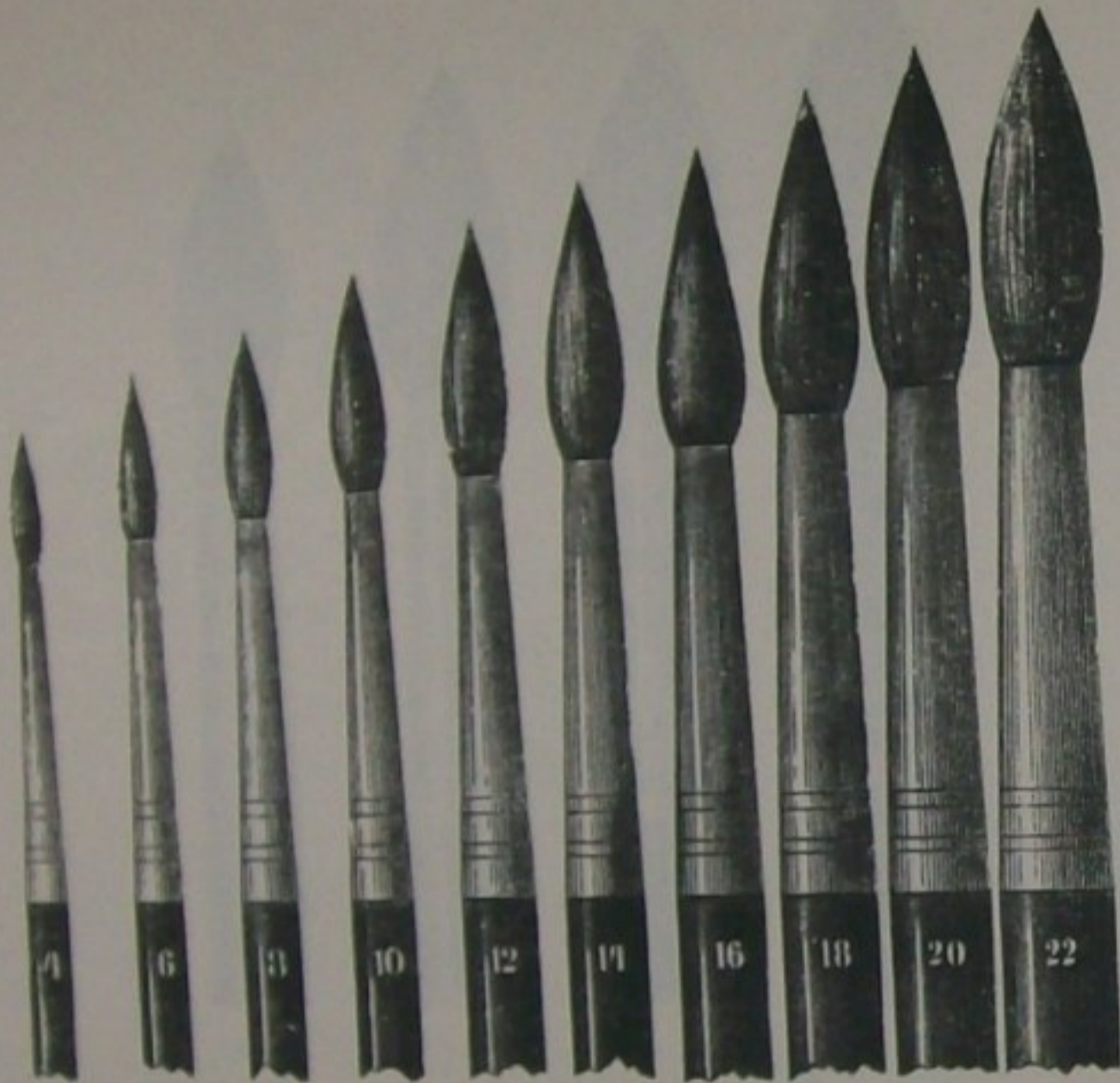
No.	0.	1.	2.	3.	4.	5.	6.
each \$	2 00	1 50	1 20	1 00	75	60	50

1305. Camel Hair in Swan Quills

No.	0.	1.	2.	3.	4.	5.	C.
each \$	60	45	35	30	20	15	12



full size

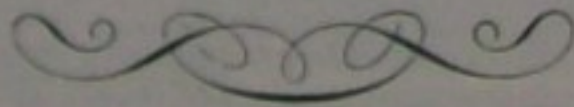


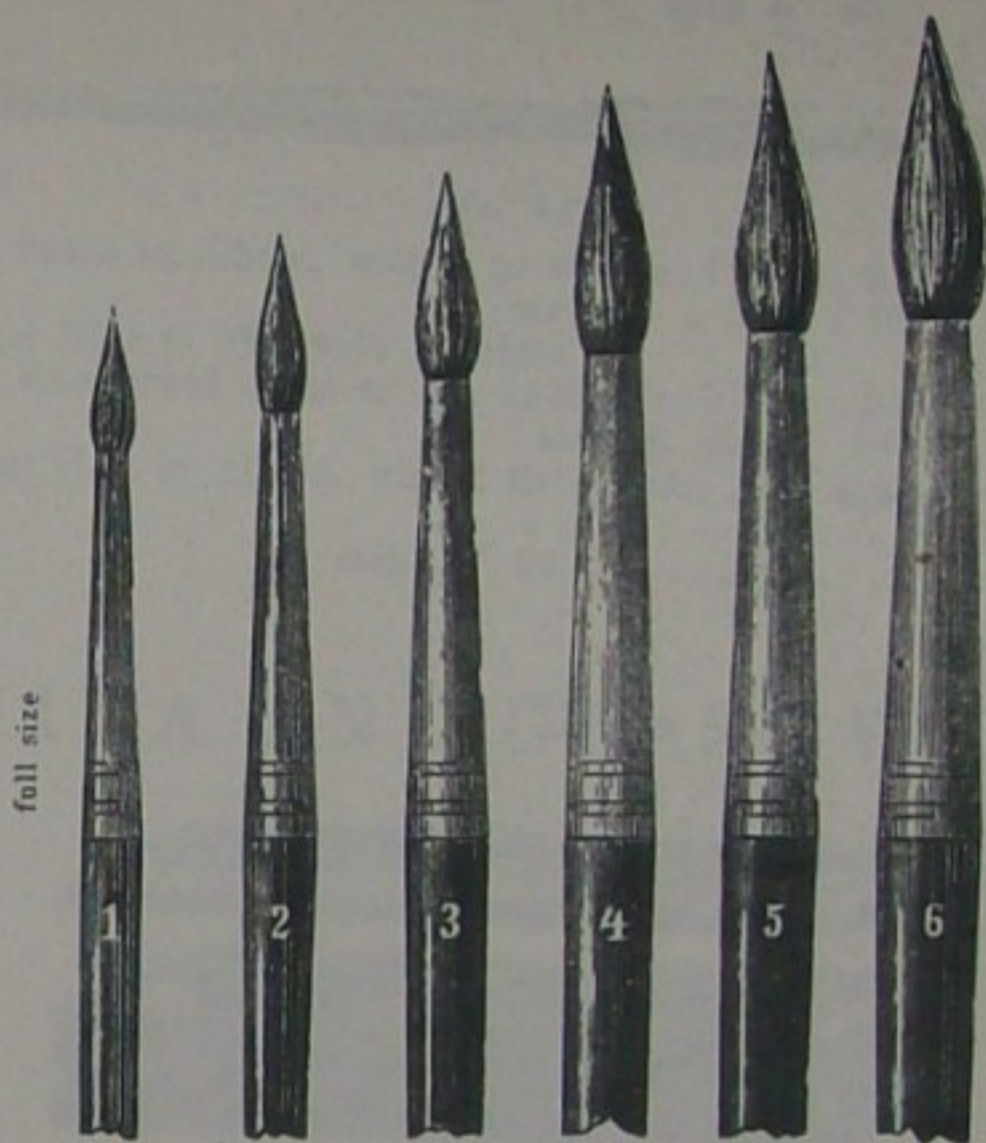
## 1310. Black Sable in Albata, with handle

	No. 2.	4.	6.	8.	10.	12.	14.	16.	18.	20.	22.
each \$	30	35	45	60	75	90	1 25	1 75	2 25	3 00	3 50

## 1311. Red Sable in Tin, with handle

	No. 2.	4.	6.	8.	10.	12.	14.	16.	18.	20.	22.
each \$	20	20	25	30	45	55	75	1 00	1 50	1 75	2 00

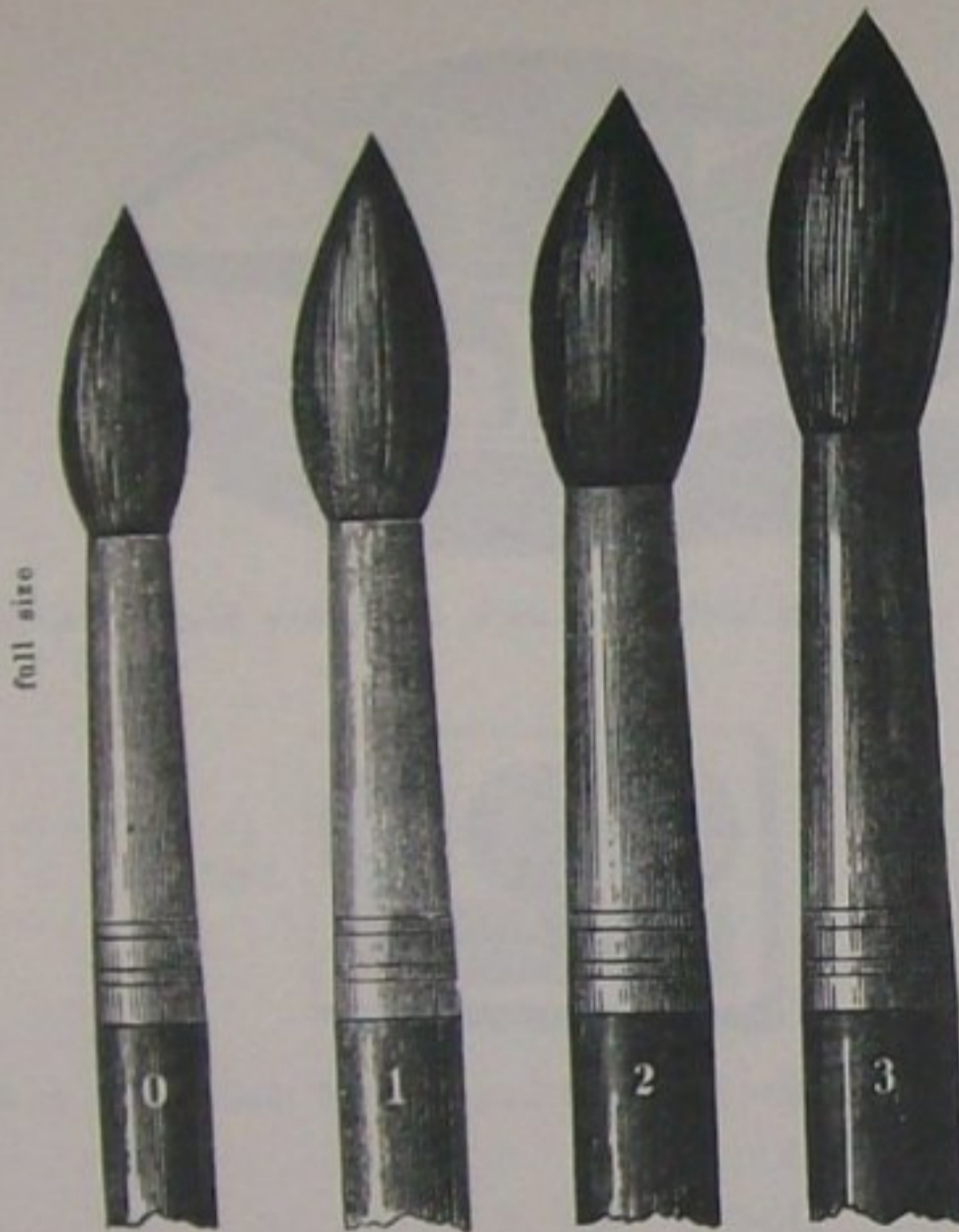




1312. Camel Hair in Tin, with handle

	No. 1.	2.	3.	4.	5.	6.
each \$	10	10	10	12	12	15





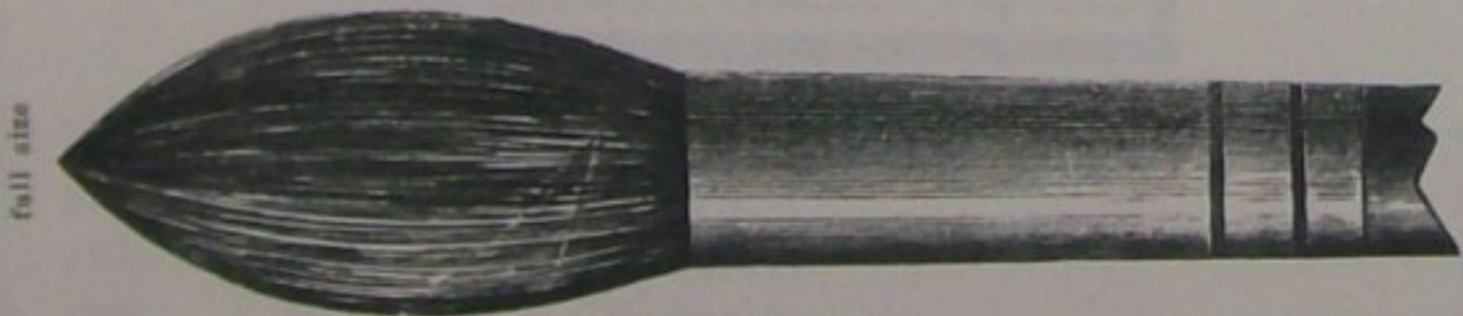
No. 1313.

1313. Camel Hair Sky or Wash Brush, No. 0.	1.	2.	3.
each \$ 25	30	35	40



No. 1314. — 2.

1314. Camel Hair Sky or Wash Brush, fine, bound in Quills No. 1.	2.	3.
each \$ 60	75	1 00



No. 1315. — 3.

1315. Camel Hair Sky or Wash Brush, extra fine, round in Albata, No. 1.	2.	3.
each \$ 60	75	1 00

1316. Camel Hair Sky or Wash Brush, extra fine, flat  
 in Albata, No. 1. 2. 3.  
 each \$ 60 75 1 00

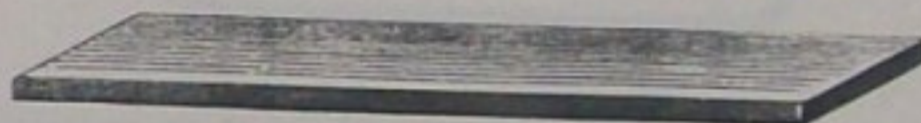
1/2 size



No. 1317.

1317. Red Sable in Albata, with 2 points No. 1. 2.  
 each \$ 1 00 1 25
1318. Camel Hair in Tin, with 2 points,  
 sizes about equal to No. 1313, No. 0. 1. 2. 3.  
 each \$ 45 50 60 75
1319. Camel Hair in Albata, with 2 flat points, sizes equal to No. 1315  
 1. 2.  
 each \$ 80 1 00

## CHINA AND GLASS WARE.

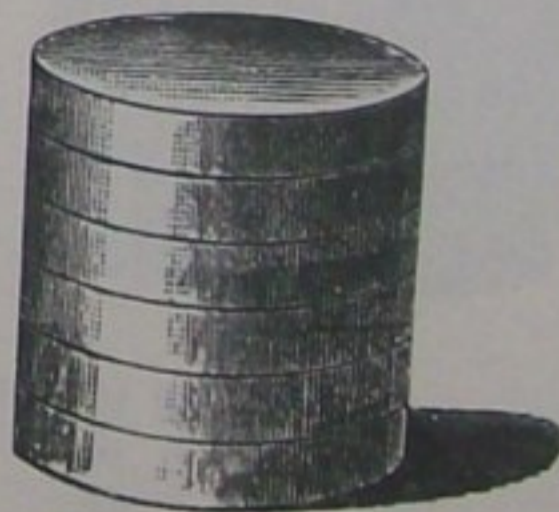


No. 1350.



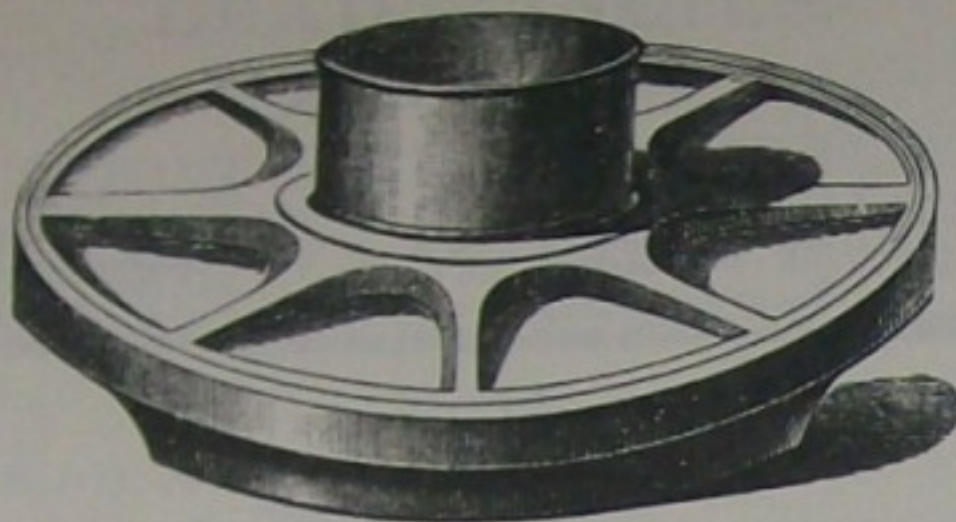
1350. Keuffel and Esser's Patent Ink Slab, with cover, 1 1/2 x 4 1/2 inch, each \$ 50  
 1351. do. do. 2 1/4 x 5 1/4 " " 60

No. 1352.



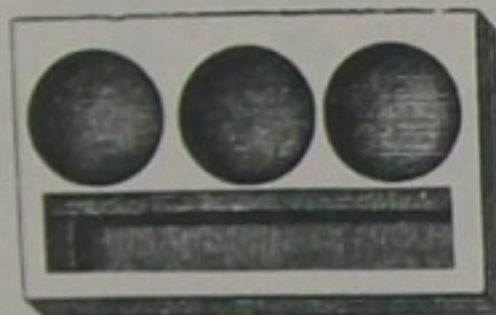
1352. Nest of Cabinet Saucers, 6 in set, 2 1/4 inch . . . . . set \$ 60  
 1353. do. 6 " " 2 1/4 " . . . . . " 70  
 1354. do. 6 " " 3 1/4 " . . . . . " 80  
 1355. do. 6 " " 3 1/4 " . . . . . " 1 00  
 1353-1. do. deep 4 " " 2 1/4 " . . . . . " 1 20  
 1354-1. do. " 4 " " 3 1/4 " . . . . . " 1 50  
 1355-1. do. " 4 " " 3 1/4 " . . . . . " 1 75  
 1356. do. in leather case, 6 " " 2 1/4 " . . . . . " 1 50  
 1357. do. " 6 " " 2 1/4 " . . . . . " 1 75  
 1358. do. " 6 " " 3 1/4 " . . . . . " 2 00

No. 1359.



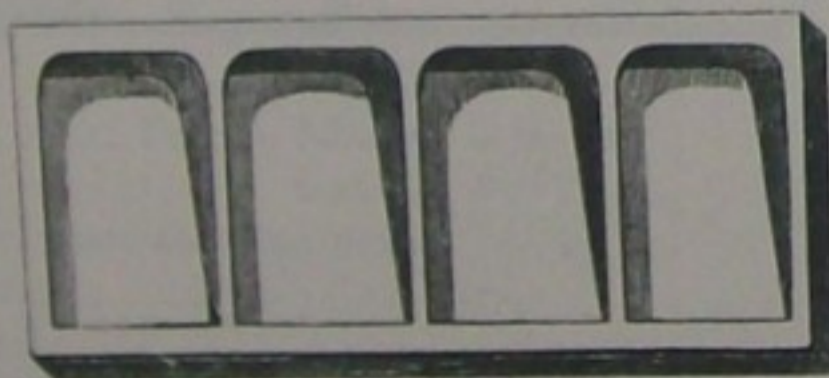
1359. Architect's Slant and Basin with 8 divisions and cup . . . each \$ 1 35

No. 1360.



1360.	Ink or Color Slab, 3 Holes and Slope,	$1\frac{1}{2} \times 2\frac{1}{4}$ inch	. . .	each \$	15
1361.	do.	"	$2\frac{1}{4} \times 3\frac{1}{4}$ "	. . . "	25
1362.	do.	"	$2\frac{1}{4} \times 4\frac{1}{4}$ "	. . . "	30
1363.	do.	"	$3 \times 4\frac{1}{2}$ "	. . . "	35
1363 $\frac{1}{2}$ .	do.	"	$3\frac{1}{4} \times 5$ "	. . . "	45
1364.	Well Slab with 3 Wells and Slope	. . . . .		"	25
1365.	do.	" 5 " " "	. . . . .	"	70

No. 1367.

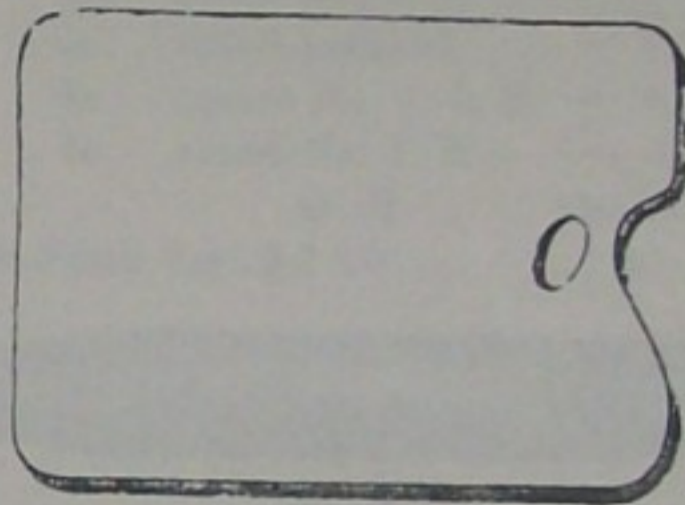


1366.	Sloping Tile, 3 divisions,	$2\frac{1}{4} \times 1$ inch	. . . . .	each \$	20
1367.	do.	4	" $3\frac{1}{4} \times 7\frac{1}{4}$ "	. . . . .	" 35
1368.	do.	5	" $3\frac{1}{4} \times 7\frac{1}{4}$ "	. . . . .	" 45
1369.	do.	6	" $3\frac{1}{4} \times 7\frac{1}{4}$ "	. . . . .	" 55
1370.	do.	8	" $6 \times 7\frac{1}{4}$ "	. . . . .	" 70
1371.	do.	10	" $6 \times 7\frac{1}{4}$ "	. . . . .	" 1 00
1371 $\frac{1}{2}$ .	do.	12	" $6 \times 7\frac{1}{4}$ "	. . . . .	" 1 20



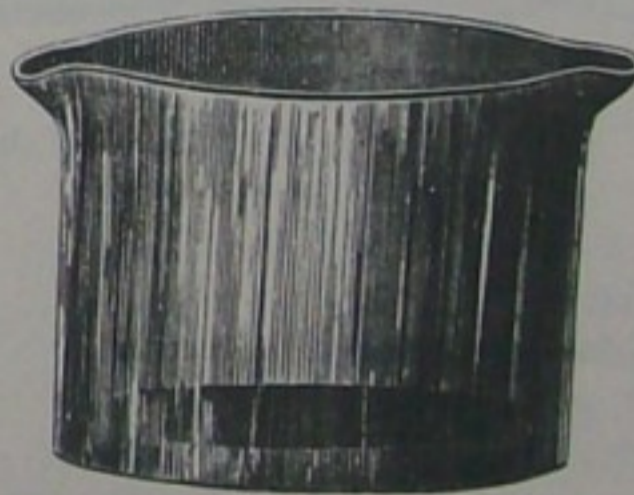


- |       |                           |                       |    |     |    |               |    |
|-------|---------------------------|-----------------------|----|-----|----|---------------|----|
| 1372. | China Color Cups          | 1½.                   | 2. | 2½. | 3. | 3½ inch diam. |    |
|       | each \$                   | 6                     | 10 | 15  | 25 | 30            |    |
| 1373. | Centre Slab, 5 divisions, | 2½ × 6 inch . . . . . |    |     |    | each \$       | 35 |
| 1375. | Brush Rest, 5½ inch long  | . . . . .             |    |     |    | "             | 15 |



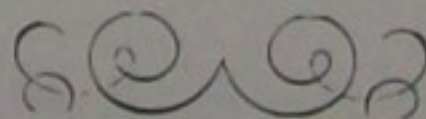
No. 1377.

- |       |                                |    |    |    |    |    |         |
|-------|--------------------------------|----|----|----|----|----|---------|
| 1377. | China Palettes, oval or oblong |    |    |    |    |    |         |
|       |                                | 4. | 5. | 6. | 7. | 8. | 9.      |
|       | each \$                        | 25 | 30 | 35 | 40 | 50 | 60      |
|       |                                |    |    |    |    |    | 10 inch |
|       |                                |    |    |    |    |    | 70      |



No. 1385.

- |       |                      |                       |  |  |  |         |    |
|-------|----------------------|-----------------------|--|--|--|---------|----|
| 1385. | Artists Water Glass, | 2½ inch diam. . . . . |  |  |  | each \$ | 15 |
| 1386. | do.                  | 3½ " " . . . . .      |  |  |  | "       | 25 |
| 1387. | do.                  | 3½ " " . . . . .      |  |  |  | "       | 35 |
| 1388. | do.                  | 4½ " " . . . . .      |  |  |  | "       | 45 |



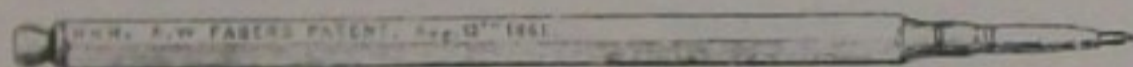
# LEAD PENCILS.

## A. W. Faber's



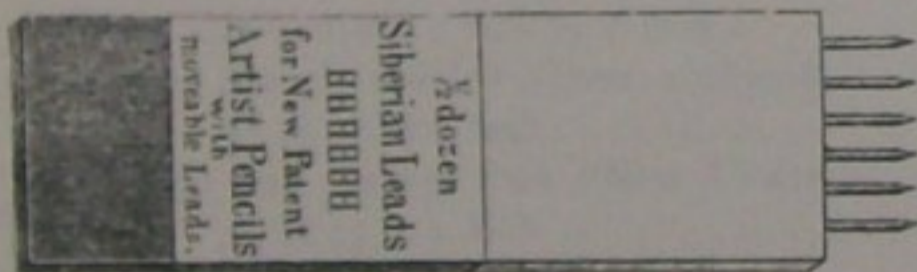
No. 1400.

1400.	Hexagon, very best Siberian, No. 4 B to 6 H . . . . .	doz	\$ 1 50
1401.	" " Drawing, No. 1-5 . . . . .	"	90
1402.	Black round, best No. 1-4 . . . . .	"	75
1403.	Yellow polished, round, No. 4 B to 4 H . . . . .	"	75
1404.	Hexagon, for Math. Instruments, No. 4 . . . . .	"	1 00
1405.	Round " do. No. 4 . . . . .	"	75
1406.	Ivory Pocket Pencil, with movable lead, 2 1/4 inch . . . . .	each	50
1407.	do. " 3 1/4 " . . . . .	"	60
1408.	do. " 3 1/2 " . . . . .	"	75



No. 1410.

1409.	Artist Pencil with Siberian lead, double pointed . . . . .	each	\$ 50
1410.	" do. " " " . . . . .	"	40
1411.	" do. best " " . . . . .	"	30

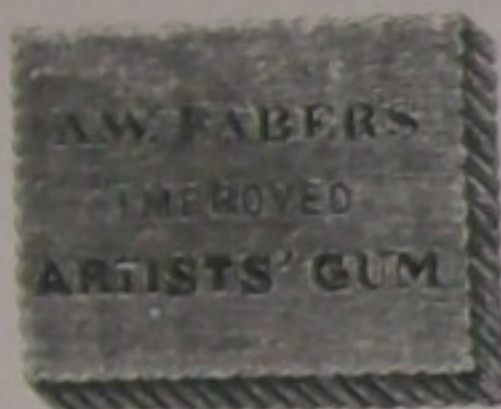


No. 1412.

1412.	Leads for Artist Pencils, Siberian, 6 in box . . . . .	box	\$ 85
1413.	" " best 6 " " . . . . .	"	50
1414.	Hexagon carmine and blue pencils . . . . .	doz	1 50
1415.	Round carmine . . . . .	"	1 00
1416.	" blue . . . . .	"	1 00
1417.	A. W. Faber's Pencil Cases		
	with 5 Siberian Lead Pencils . . . . .	each	\$ 1 00
1418.	" 7 " do. . . . .	"	1 50
1419.	" 10 " do. . . . .	"	2 00
1420.	" 5 " do. Rubber and Knife . . . . .	"	1 50
1421.	" 5 Yellow round do. . . . .	"	60
1422.	" 7 " " do. . . . .	"	80
1423.	" 10 " " do. . . . .	"	1 00
1424.	" 5 " " do. Rubber and Knife . . . . .	"	1 00



# RUBBER.



A. W. Faber's Artist's Rubber, in Cakes . . .	each	\$	10 to	50
"    Natural    "    "    "    "    "			10 "	50
"    Black    "    "    "    "    "			10 "	50
"    Ink Eraser    "    "    "    "				6
"    do.    "    large    "    "				10
Ink and Pencil Eraser in Cakes . . . . .				15
do.    do.    Mammoth . . . . .				25
Green's Ink Eraser . . . . .				6

# SPONGE RUBBER

for cleaning Drawings.

No. 0. Small Cakes, about 1 × 1 × 1 inch . . . . .	\$	10
" 1. Sponge Rubber, and Ink Eraser combined, 1½ × 1½ × ¼ inch . . . . .		15
" 2. Medium Size, Rubber Back (Glove Cleaner) 2½ × 1½ × ¼ inch . . . . .		25
" 3. Large Size, 4 × 2 × 1 inch . . . . .		60
" 4. Mammoth Size, 6 × 4 × 1 inch . . . . .		1 80



Pencil Pointer 2 × 2½ inch . . . . .	each	\$	10
"    "    2½ × 4    "    "    "    "			15
Arkansas Oil Stones . . . . .	each from	\$	25 to 1 50
do.    "    Deskstones on wood . . . . .		each	\$ 75
do.    "    Stones in Case with Cover			
4.    5.    6.    7.    8 inch			
each	\$	1 50	2 00
"    "    "    "    "		2 25	2 50
"    "    "    "    "		2 80	
Mouthglue, in boxes of ¼ pound . . . . .	box	\$	50
do.    fine perfumed . . . . .		"	80
Mucilage, in Glass Bottles with Brush . . . . .	each		25

# SKETCH BOOKS & BLOCKS.



No. 1460.

		Whatman's.	Paper No. 4.
1460.	Sketch Book, open leaves, white, $4\frac{1}{2} \times 6$ inch each	\$ 65	\$ 50
	do. " $5 \times 7$ " "	90	65
	do. " $6 \times 9$ " "	1 20	85
	do. " $9 \times 12$ " "	2 15	1 50
1461.	do. tinted, $4\frac{1}{2} \times 6$ " "	—	55
	do. " $5 \times 7$ " "	—	80
	do. " $6 \times 9$ " "	—	95
	do. " $9 \times 12$ " "	—	1 60



No. 1462.

		Whatman's.	Paper No. 4.
1462.	Sketch Block, white, $3\frac{1}{2} \times 5$ inch . . . . . each	\$ 30	\$ 20
	do. " $5 \times 7$ " . . . . . "	55	35
	do. " $7 \times 10$ " . . . . . "	85	55
	do. " $10 \times 14$ " . . . . . "	1 75	1 00
1463.	Sketch Block, tinted, $4\frac{1}{2} \times 6$ inch . . . . . "	—	30
	do. " $5 \times 7$ " . . . . . "	—	50
	do. " $6 \times 9$ " . . . . . "	—	60
	do. " $9 \times 12$ " . . . . . "	—	1 00
1464.	Sketch Block, bound white, $3\frac{1}{2} \times 5$ inch . . . . . "	70	55
	do. " " $5 \times 7$ " . . . . . "	1 00	85
	do. " " $7 \times 10$ " . . . . . "	1 65	1 25
	do. " " $10 \times 14$ " . . . . . "	2 60	1 80
1465.	do. " tinted, $4\frac{1}{2} \times 6$ " . . . . . "	—	80
	do. " " $5 \times 7$ " . . . . . "	—	95
	do. " " $6 \times 9$ " . . . . . "	—	1 20
	do. " " $9 \times 12$ " . . . . . "	—	1 75



## W. HERMES STUDIES.

1471. W. Hermes, Drawing School,  
6 Studies in Cover,  $5\frac{1}{2} \times 8\frac{1}{2}$  inch . . . . . each \$ 25  
on the following Subjects:  
Serie 1. Easy Lessons in Drawing.  
" 2. Landscapes.  
" 3. Flowers and Fruits.  
" 4. Arabesques.  
" 6. Animals.  
" 7. The Human Form.  
" 8. Geometrical Drawing.  
" 9. Architectural Drawing.
1472. W. Hermes, Drawing Master,  
4 Studies in Cover,  $8\frac{1}{2} \times 11\frac{1}{2}$  inch . . . . . each \$ 50  
on the following subjects:  
Serie 1. Landscapes.  
" 2. Flowers and Fruits.  
" 3. Heads.  
" 5. Horses.  
" 6. Animals.  
" 7. Foliage.

## GEOMETRICAL AND MACHINE STUDIES.

1481. Machines, Parts of Machines, Locomotives, Bridges, Details  
of Architecture, Arches, Roofs etc. etc., colored  
very well executed in tints to indicate the different  
parts.  
Set of 125 plates,  $12\frac{1}{2} \times 19\frac{1}{2}$  inch . . . . . each \$ 45
1482. Geometrical Figures and Projections.  
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